Lucretia Sharp

AN EASY INTRODUCTION TO THE KNOWLEDGE OF NATURE, AND READING THE HOLY SCRIPTURES.

ADAPTED TO THE CAPACITIES OF CHILDREN.

By Mrs. TRIMMER.

THE EIGHTH EDITION,
WITH ADDITIONS AND IMPROVEMENTS.

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M DCC XCIII.

Lucretia Sharp 1798

TO THE

RIGHT HONOURABLE

Lady CHARLOTTE FINCH.

MADAM,

THE purpoſe for which this little treatiſe was compoſed can alone entitle it to your Ladyſhip's notice; for in its execution I fear it is very imperfect; but, as it is intended to lead to the moſt ſerious concerns of human life, *The knowledge of the* GREAT CREATOR, *and the ſtudy of his works*, I hope it will not be thought totally unimportant.

Permit me to ſay, MADAM, that before I ventured to produce it to the world, I had the happineſs to obtain the ſanction of your Ladyſhip's approbation, which encouraged me to hope for a favourable reception from the public; as the great ſucceſs with which you have educated the ROYAL FAMILY ſo evidently proves that your LADYSHIP is perfectly acquainted with the moſt happy arts of winning the attention of children, and the moſt proper method of conveying religious and moral inſtruction to their tender minds.

With the moſt ardent wiſh that your LADYSHIP may long continue to enjoy every comfort both of public and domeſtic life, I have the honour to be,

MADAM,

Your LADYSHIP's

moſt obliged,

and devoted Servant,

SARAH TRIMMER.

BRENTFORD,
December 12, 1780.

PREFACE.

As it may ſeem unneceſſary to add to the number of books which have already been written expreſsly for the uſe of children, I think it proper to mention, that the hint of the following little work was originally taken from Dr. Watts's treatiſe on education, ſection the 2d, on the exerciſe and improvement of the natural powers of children; his words are theſe:

"Almoſt every thing is new to children, "and novelty will entice them onwards "to new acquirements: Shew them the "birds, the beaſts, the fiſhes, the inſects, "trees, fruit, herbs, and all the ſeveral

" parts and properties of the vegetable and
" animal world. Teach them to obſerve
" the various occurrences of nature and
" Providence, the ſun, moon, and ſtars,
" the day and night, ſummer and winter,
" the clouds and the ſky, the hail, ſnow,
" and ice, winds, fire, water, earth, air,
" fields, woods, mountains, rivers, &c.
" Teach them that the GREAT GOD made
" all theſe, and that his providence go-
" verns them."

But delightful as theſe things are to children, if communicated in a way that is accommodated to their capacities, they can never be brought in their early years to attend to ſcientific accounts of cauſes and effects, or to enter far into each particular branch of knowledge.

I therefore thought that a book containing a kind of general ſurvey of the works of

of Providence might be very uſeful; as a mean to open the mind by gradual ſteps to the knowledge of the SUPREME BEING. For as we need only read the *volume of nature*, in order to diſcover his *wiſdom* and *goodneſs*, a deſire of doing his *will* might from thence be excited in their minds, before they were permitted to read the *Holy Scriptures*, which they ſhould not begin till they had been previouſly taught that they contain the revelation which he has vouchſafed to make of himſelf, his gracious diſpenſations towards mankind, and the duties we are required to perform in order to obtain his favour.

I have never yet met with any *one* book ſufficient to anſwer theſe purpoſes; for, though there are numbers excellently calculated to improve thoſe who have made ſome progreſs in knowledge, they are in

general too difficult to begin with, and therefore require ſomething preparatory; excepting thoſe which contain exemplary hiſtories ſuitable to their age: which, though they have a very good tendency, are not alone ſufficient to form the minds of children.

Nor have I the vanity to ſuppoſe that this imperfect performance will fully anſwer that purpoſe; it is only meant as a link in the chain of education where there appeared to me to be a deficiency; and I flatter myſelf that it will prepare the minds of children for higher degrees of knowledge, and ſo increaſe the value of ſome of thoſe entertaining and inſtructive books which have already been publiſhed for their uſe; for I am perſuaded, from experience, that thoſe who can be induced to advance as far as I have here endeavoured to lead them,

them, will naturally aſpire to higher degrees of information.

I cannot paſs over this opportunity of mentioning a very uſeful publication, entitled *Leſſons for Children from two to four Years old*, written by Mrs. Barbauld (ſold at No. 72, St. Paul's Church-Yard), which I think are the beſt adapted for the purpoſe of teaching them to read of any I ever met with. I have endeavoured to adopt a mode of expreſſion ſimilar to Mrs. Barbauld's Leſſons, and to build upon the ground-work which that ingenious lady has laid for the Inſtruction of Children, in a ſtyle of familiar converſation.

Perhaps it will be thought that I have deviated from my plan of ſimplicity and eaſe in the latter part of this work; but I have here taken for my guide the *Archbiſhop*

of Cambray's Inſtructions for the Education of a Daughter, and indeed copied him in ſome places reſpecting the diſtinction between the ſoul and the body. To the authority of this great name I ſhall only beg leave to add my own humble opinion, that children may be taught theſe things at an earlier age than is uſually practiſed; and ſurely in this caſe, above all others, the experiment ought to be made; for if it be thought neceſſary to teach them betimes the ornamental parts of education, which can be of uſe only in this tranſitory life, how much more neceſſary is it to embrace the firſt opportunity of ſeaſoning the infant mind with thoſe ſpiritual graces which are calculated to prepare them for a happy eternity?

Such inſtructions are of the higheſt importance, and moſt eſſential for all to be acquainted

acquainted with; therefore, arguing from the *Goodneſs* and *Condeſcenſion* of the ALMIGHTY, there is reaſon to hope that he will aſſiſt thoſe with his ſpecial bleſſing who endeavour to impreſs the minds of Children with a devout ſenſe of their CREATOR and *a deſire of immortal Happineſs*, by calling their early attention to *the Works of His Providence, and the Truths of his Religion.*

AN

Eaſy Introduction, &c.

PART I.

I HAVE been thinking, my dear Charlotte, that you and I might take ſome very profitable walks together; and, at the ſame time that we are benefiting our health, by air and exerciſe, might improve our minds; for every object in nature, when carefully examined, will fill us with admiration, and afford us both inſtruction and amuſement; and, I am purſuaded, we ſhall find that nothing has been made in vain.

Though

Though Henry is ſo young, he is a ſenſible little boy, and will be able, I dare ſay, to underſtand many things which we ſhall have occaſion to talk of; therefore I think to take him with us: I long to ſee him, as I ſuppoſe he is greatly pleaſed with his change of dreſs! Oh! here he comes. Your ſervant, Sir! you are very ſmart, indeed; I could not imagine what little beau it was ſtrutting along; I ſuppoſe, now you are dreſſed like a man, you begin to fancy that you are one; but, though you can read and ſpell, ſpin a top, and catch a ball, I do aſſure you there are a great many things for you to learn yet, and I ſhall be happy to teach you what I know. Your ſiſter and I are going to take a walk; we ſhall have many pretty things to look at and talk about, therefore I dare ſay you will be happy to be of our party, will you not?

You know, my dears, in the walks we have already taken in the fields together, I ſhewed you a great variety of plants and flowers; you have ſeen the cattle and ſheep grazing,

grazing, the little birds hopping and flying about; and though I told you the name of every thing you ſaw, which I hope you will remember, you muſt learn to know a great deal more about them. Charlotte is going to get herſelf ready, ſo fetch your hat, Henry, and let us go into the meadows, where I am ſure we ſhall ſoon find ſomething worth examining.

Well, Henry, what do you think: is not this a charming place? You know that it is called a meadow. See how green the graſs looks, and what a number of pretty flowers! Run about, and try how many different ſorts of graſs you can find, for it is now in bloſſom. One, two, three: you have got eight ſorts, I declare! Charlotte has gathered quite a noſegay; daiſies, cowſlips, butter-cups: As for the reſt, I do not know their names, ſo we muſt ſearch the herbal, where we ſhall find them, and learn what they are called.

I need not tell you what is the uſe of graſs,

graſs, becauſe you have ſo frequently ſeen the cows, horſes, and ſheep eating it; but they do not eat it all in that ſtate; no, a great quantity of the graſs that grows is cut down with a ſcythe, like what our gardener uſes, which is called mowing; then come the haymakers, who turn it over and over again, ſpreading it upon the ground; and when the ſun and air have ſufficiently dried it to keep it from becoming mouldy, it is carried home to the farmer's yard, and put together in great heaps called hayricks and hay-ſtacks.

There are thouſands and thouſands of loads made every year, which ſerve to feed the cattle in the winter; for there is but little green graſs for them then. All of it grows from little ſeeds no bigger than pins' heads: look at the bloſſoms in your hand, Henry; they would ſoon have turned to ſeeds.

In a meadow, where there has been hay made, a great many of the dry ſeeds drop and are ſcattered about, and graſs ſprings from them the next year; but if people want

want to make a new meadow, they muſt keep ſome ſeeds and ſow them.

The beautiful flowers which you have in your hand, Charlotte, grew likewiſe from ſeeds which were mixed amongſt the hay-ſeeds; for the plants which ſprung from thoſe ſeeds are good for the cattle, and ſerve to give a pleaſant taſte to the graſs. Beſides, numbers of them are medicinal, that is, good to make medicines for the cure of many diſorders to which we are ſubject.

Don't you think that graſs is a very uſeful thing? I am ſure the poor horſes, cows, and ſheep, would ſay ſo could they reaſon and ſpeak; for they have no cooks to dreſs victuals for them, nor money to buy bread, nor can they aſk for any thing they want; ſo you ſee their food grows under their feet, and they have nothing to do but to eat it.

Now we will take leave of the meadow, and go into the corn field. Look, Henry; pray

pray take notice, Charlotte, this is wheat. I hope we ſhall have a plentiful harveſt; but it will not be ripe till Auguſt, which is called the harveſt month: However, I put this ear in my pocket, which was plucked laſt year, on purpoſe to ſhew you what all this which grows here would come to: rub it with your hands, Henry, blow the chaff from it, give me one of the ſeeds. This is called a grain of corn. You ſee there are a great many grains in an ear; and look here are a great many ears from one root, and yet the whole root grew from one ſingle grain, which was ſowed laſt year.

The earth was turned up with a plough, then the grains of corn were thinly ſprinkled in the furrows, and the earth drawn over them with a harrow; after they had ſwelled ſome time, and become ſoft, by the moiſture of the ground, little roots ſtruck downwards, and ſtalks grew upwards, broke through the ground, and branched out, in the manner you ſee here; and produced ears, each of which, perhaps, contains

tains twenty grains; and ſo, if you reckon all that are grown from the ſeeds which came up, there may be a hundred times as many as were put into the earth.

This which grows now will be ripened by the ſun, and look like that which you rubbed to pieces; then it will be cut down with a ſickle, and tied up in bundles called ſheaves, and carried to the barn, where it will be threſhed, cleaned from the chaff, and ſent to the miller; he will grind it into flour, which will be ſold to the bakers, who will make it into bread; but they muſt leave ſome for puddings and pies.

Only think, Henry, what a deal of corn muſt be ſown every year, to furniſh bread for thouſands and ten thouſands of people! And what ſhould we do without it? For bread is the cheapeſt and wholeſomeſt food we have; many poor people can get but little elſe to eat.

But corn will not grow without ſowing, as the hay ſeed does, becauſe the ſeed is larger, and muſt be buried deeper in the earth, therefore a deal of hard work muſt be

be done to prepare the ground for it. But, my dear Charlotte, I think you have tired yourſelf; and Henry ſeems to have done ſo too; therefore let us ſit down on this graſſy bank, and reſt.

What a fine ſpreading oak is this, which ſerves us for a canopy, and ſhades us ſo comfortably from the ſun! See what a number of acorns hang upon it; they are excellent food for hogs. But do not think that the ſtately oak is good for nothing but to ſupply them with proviſion; it is of the greateſt uſe to us. How large it is! it is bigger round than any man ever was; it has hundreds of branches, thouſands of acorns, and ſtill more leaves. It has great roots, which ſtrike a long way into the ground, and ſpread all round at the bottom; they keep it from being blown down by the violent guſts of wind, which it frequently has to encounter; and through the roots it is that the moiſture of the earth nouriſhes it, and keeps it alive.

Now,

Now, Henry, is it not a very ſurpriſing thing that this great tree grew at firſt from a little acorn? Look, here is a young one, called a ſapling; it is ſo little, Charlotte, that you will be able to pull it up yourſelf. There you ſee is the acorn ſtill ſticking upon the root. The oak we ſit under probably is an hundred years old; when it is cut down it will be called timber; the ſawyers will ſaw it in pieces proper to be uſed in building ſhips and houſes.

There are many ſorts of timber trees beſides, as aſh, elm, cheſnut, walnut, and others.

When there are a number of trees growing near together, the place is called a wood; you have each of you been in one; you recollect that I ſuppoſe, and what kind of a place it was. I wiſh we were in one now, for it is hot walking.

But I was going to obſerve, that all ſorts of trees grow either from ſeeds or kernels that are withinſide their fruit, or elſe from

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little plants taken from the old roots, or ſlips taken off from their branches. All timber trees grow without any trouble, for the rain waters them; but I forgot to mention the bark, Charlotte, which is this outſide part. It is of great uſe to tanners and dyers; and the dry branches, which are good for nothing elſe, make cheerful comfortable fires; ſo that you ſee trees are very valuable; nay, poor Henry would miſs them, for traps, tops, and bats, are cut out of them.

See how the pretty birds ſit ſinging on the branches; how glad they muſt be, when it rains, to ſhelter themſelves amongſt the leaves: Beſides, if a heavy ſhower was to come now, we ſhould be happy to ſtand under a tree ourſelves, provided there was no appearance of a thunder-ſtorm; for in thunder-ſtorms trees often attract the lightning, which might make it very dangerous to be near them.

Do not you ſmell ſomething very ſweet? Look about in the hedges, Henry, and try if

if you can diſcover what it is. See, Charlotte, what a fine parcel of woodbines he has got; they are quite delightful: Take notice the woodbine is very different from the oak; it has long ſlender ſtalks, and would fall upon the ground but that it borrows aſſiſtance of its neighbours. Obſerve how it twiſts about, and lays hold firſt of one thing, then of another. Laſt month there were briar-roſes and hawthorns, that were very beautiful, but now they are out of bloſſom, and ſee the fruit is growing. The briars produce hips; the hawthorns haws; they are for the birds to eat in the winter. There are a great many pretty things that grow in the hedges, as you may ſee, and all are of ſome uſe. Theſe are brambles; they will ſoon produce blackberries: Don't you love blackberries? you ſhall come and gather ſome when they are ripe; but you muſt be ſure never to eat any thing that grows wild in the fields, without knowing what it is, becauſe ſome berries that appear very beautiful to the eye are poiſon, and would kill you.

There was a little boy who gathered ſomething that looked almoſt like currants, and as ſoon as he had ſwallowed them, his throat and ſtomach felt as if he had eaten fire; and he ſwelled and ſwelled, till in a ſhort time he died; and yet thoſe berries might be very good, and even valuable for ſome uſes.

The farmers plant hedges to divide and ſecure their fields; for if the cattle ſhould get amongſt the corn, they might do a great deal of miſchief; beſides, people would not know exactly where their own ground ended, and their neighbours began; and the cattle would be very cold in the nights, but that the hedges ſhelter them.

Don't you think this has been a very pleaſant walk, Henry? Shall I cut you a ſtick? Here, take this, it is a hazel-twig; nuts grow on hazel trees: filberts are another kind of nut, much more delicious: walnuts you have ſeen growing in our orchard. There are a variety of fruits which

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are contained in hard ſhells, in the ſame manner; as almonds, cheſnuts, &c. The cocoa-nut is the largeſt that I know of; you ſaw and taſted one the other day. I never ſaw a cocoa-tree, ſo cannot give you a perfect deſcription of it, but have read that it grows ſtraight without any branches, and is generally very high: at the top it bears twelve exceeding large leaves, uſed by the Indians in covering houſes, making mats and other things; between the leaves and the top ariſe ſeveral ſhoots, as thick as a man's arm, which, being tapped, yield a very agreeable liquor, called in the Eaſt-Indies toddy, from which arrack is made; but frequent tapping deſtroys the tree: theſe ſhoots of branches put forth a large cluſter or bunch of cocoa nuts, to the number of ten or twelve.

Three times a year the tree yields fruit, which is as big as a man's head: but there is another ſort no larger than your fiſt, of which they make punch ladles in the Weſt-Indies.

It is aſtoniſhing to think what a quan-

tity of proviſion and uſeful materials theſe trees ſupply; they grow in the Eaſt and Weſt-Indies, and in Africa.

There is another ſort of nut called the cacoa; this grows in the Weſt-Indies and South-America. The tree which produces it is ſomething like our cherry-tree, and the nut about the ſize of an almond: there are ſeeds withinſide, which are made into chocolate, with the addition of ſome other ingredients. The beſt ſort of this nut is imported from Carraca.

I begin to fear you will be tired; we muſt therefore think of returning home, but we will go through the barley field.

Obſerve; this is very different from Wheat; the ears have long, hairy ſpikes, which are called beards. Do not put them in your mouth, for if you do, they will ſtick in your throat and choak you. Barley is ſown in the ſame manner as wheat is, but does not make ſuch good bread: it is however very uſeful to us;

for

for after it has been threſhed, it is ſold by the farmers in great quantities to the maltſters, who pour water upon it, which makes it ſprout; then they dry it with hot cinders, and it becomes malt; with the addition of a great deal of water, and ſome hops, to give it a pleaſant bitteriſh taſte, and keep it from becoming ſour, it is brewed into beer, which is one of the comforts of life, and helps to give the poor men who drink it ſtrength to do their laborious work. Barley is alſo good to feed chickens, turkeys, and other poultry.

Hops, you know, grow in gardens and fields, which are from thence called hop-grounds; and run up long poles: when they are ripe they are gathered, dried, and ſold moſtly to people called hop-merchants.

Now we are come to a field of Oats; pray look at it, that you may know it again from wheat and barley. The poor horſes make their meal of oats and hay all

the winter; and when they are kept in ſtables they eat them in ſummer too; ſo that you find oats are very uſeful.

We have in England another kind of corn, called Rye, of which bread is ſometimes made; but this is inferior to Wheat.

Some countries do not produce corn like that which grows here, but are in general ſupplied with ſomething that partly anſwers the ſame purpoſe, though I believe all are glad to get Wheat, if they can purchaſe it; and great quantities are exported from England, France, &c. in plentiful years, which is ſold to great advantage.

The grain which is called Turkey Wheat is very different from ours. Its ſtalk is like a reed with many joints, and grows to the height of five or ſix feet; out of the joints ſhoot the ears, which conſiſt of a great number of grains, each about the ſize of a pea, encloſed in coats or huſks, which burſt open with the heat of the ſun, and then it becomes quite ripe.

Millet, I believe, comes from Turkey. Rice grows in the Eaſt and Weſt Indies. I need not tell you, for you already know

by

by experience, that they make delightful puddings; and I dare ſay you think rice-milk is excellent food, and that it is right to let thoſe people who furniſh us with ſuch good things have a little Corn in return.

In countries where there is no grain to be had, the inhabitants are under the neceſſity of eating roots or fruits; and even in ſome parts of our king's dominions, the poorer ſort of people are obliged, from the barrenneſs of their ſoil, and extreme poverty, which prevent their either cultivating or purchaſing wheat, to eat cakes, puddings, and porridge made of oatmeal; and, inſtead of a good dinner of meat and bread, are glad to ſatisfy their hunger with potatoes alone. How happy therefore, my dears, ought we to think ourſelves, who have never known the want of bread. I hope you will remember this, and let it be a rule never to waſte what ſuch numbers would be glad to have. Even the crumbs which you accidentally let fall, might, if collected, afford a hearty meal

for a little bird, and make him merry for the whole day; or would ſerve to divide amongſt its neſtlings which might otherwiſe open their mouths and chirp for food many a time, whilſt the parent bird was ſeeking it with weary wings. I was very angry with you, Henry, the other day, for flinging bread at your ſiſter; but I hope you will never do ſo any more, now I have informed you what a bleſſing it is: for I have ſeen perſons who wantonly waſted bread live to feel great diſtreſs for want of it.

Can you tell me, Henry, what grows in this field? They are turnips. I will pull one up. This root, when it is boiled, is very wholeſome, and excellent ſauce for mutton, lamb, and other meat: there is a great deal of turnip-ſeed ſown every year for our tables, and likewiſe to give to the cows, turnips being cheaper than hay.

Some fields are planted with potatoes; numbers ſown with carrots, a great many with peas and beans, others with hemp and flax, which are very valuable commodities:

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when I have an opportunity I will ſhew you ſome. The ſtalks of hemp and flax, after they have been beaten, and properly prepared, are ſpun into Thread, of which all linen cloths are made; they likewiſe furniſh the materials for all kinds of ropes and cords. That fine cloth, which your frock is made of, Charlotte, once grew in a field, and ſo did that of Henry's ſhirt. It was made in Ireland and Scotland, but a great deal of the ſame ſort is made in Flanders and Germany.

Flax is alſo ſpun into exceeding fine thread, for weaving of lace, and working upon muſlin.

Inſtead of theſe plants, they have in ſome countries, particularly in the Eaſt and Weſt Indies, cotton. Of this they make muſlins, dimities, and callicoes. Cotton is a kind of down that is round the ſeed of a tree, called the cotton-tree. It grows in pods about the ſize of a walnut; as they ripen, their outſides become black, and the

heat of the ſun makes them ſplit open; they are then gathered; and with a proper machine the cotton is ſeparated from the ſeeds, and afterwards ſpun for the purpoſe of weaving. So you ſee, my dears, there are variety of materials for cloathing; and the ingenuity of mankind has invented many ways of applying them to uſeful purpoſes. Even the very bark of trees is, with incredible labour and induſtry, ſometimes converted into curious cloth by ſavages, who to us appear extremely ignorant; and there are others who weave themſelves ornaments and garments of net-work, covered with feathers.

Beſides what grow in the fields which belong to the farmers, the gardens afford many excellent things. There are cabbages, and cauliflowers, brocoli, lettuce, endive, cucumbers, French beans; in ſhort, a hundred things very pleaſant to the taſte, and extremely wholeſome.

Beſides, you know there are fruit-trees, the names of which, I fancy, you are intimately acquainted with; currants, gooſeberries,

berries, apples, pears, peaches, nectarines, plums, grapes, apricots. Don't you wiſh they were all ripe, Henry? Then, what excellent tarts we could make! and what feaſts we ſhould have! Well, have a little patience, my dear, they will ſoon be ripe, and then you ſhall have plenty; but you muſt not eat them before they are ripe; for they will make you very ill.

I knew a little boy, Henry, who uſed to look as freſh and roſy as you do, and run about, and be merry all day long. His mamma had a great garden, and ſhe told him not to gather the green fruit; but the little greedy fellow would not pay attention to what ſhe ſaid; like a ſilly child as he was, he thought he knew better than his mamma, ſo he ſtole in unperceived, and ate the green gooſeberries, and currants, by which means his ſtomach being filled with traſh, he entirely loſt his appetite, and his roſy cheeks became as pale as death; at laſt worms, live worms, came in his bowels. They were in the green fruit, but ſo ſmall that he could not ſee them, and he

was taken very ill, and had like to have died: ſo when all the good children were eating ripe fruit every day, he was lying ſick a-bed, and did not get well before it was gone.—Was he not rightly puniſhed for being ſo undutiful and greedy?

You remember, my dear children, how very beautiful the fruit-trees looked a little while ago, when they were in full bloom; the bloſſoms are now gone, and the fruits grow in their ſtead; they will get bigger and bigger every day, till the heat of the Sun ripens them, and then they will be fit to gather.

Apples and pears will keep all the winter; but the other fruits will become rotten, unleſs they are preſerved, by boiling them up with ſyrup made of ſugar and water; or elſe dried; ſo we muſt ſpeak in time to the houſekeeper, that ſhe may preſerve us ſome damaſcenes and gooſeberries for tarts, make marmalade of quinces, preſerve apricots, and make currant-jelly and raſberry jam.

Currants, grapes, and gooſeberries will make

make wine; but that is not at all good for little boys and girls; they can be merry enough without it; and ſweetmeats muſt be eat very ſparingly, or they will make you ſick, and ſpoil all your teeth, I aſſure you.

When you can get no ripe fruit, a little currant-jelly, and other things of that kind, are very agreeable; but as for ſugar-plums, and the reſt of thoſe pernicious meſſes, they anſwer no purpoſe in the world but to make people diſreliſh what is wholeſome; and when they have loſt all their teeth by indulging themſelves with them, it will be too late to reſolve againſt eating any more; therefore it is better to prevent the miſchief, by not eating them at all. I am ſure I would not part with one tooth for all the ſweetmeats in the world.

Charlotte, if you are not tired, my dear, we will go into the flower-garden: As for Henry, he is too much of a man to com-

plain; nay, I am ready to believe he could keep upon his feet from morning to night. Come, ſir, take the key, and open the gate. This I think is the moſt delightful place we have ſeen yet!

What ſhall we look at firſt? There is ſuch a variety of beauties that one knows not which to prefer; you admire thoſe in the fields, but theſe excel them.

Look at thoſe tulips! examine thoſe carnations! obſerve that bed of ranunculas! and then admire that ſtage of auriculas! The whiteneſs of this lily exceeds that of the fineſt cambrick. This blue flower is a convolvulus; it is very like the binds that grow in the hedges, only they are of a white colour. Pray, Charlotte, gather one of thoſe very little flowers; I have forgot its name; but whilſt one ſees it near it is as beautiful and curious as the large ones. Now turn your eyes to that noble ſunflower! that elegant holyoak! that glorious piony! —I beg of you to gather me one of thoſe charming roſes: how ſweetly they ſmell! get me alſo a little ſprig of jeſſamine, and one honeyſuckle, for I cannot tell how to leave

all theſe ſweets behind me; but I will not permit you to gather many, becauſe it is a pity to ſpoil them. The gardener brought us ſome to dreſs our rooms with this morning, and I know if you ſhould pluck any they would ſoon be dead in your warm hands, for nothing but water will keep them alive.

Have you taken notice that every flower has different leaves from the reſt? That ſome of them are variegated with all the colours you can name, and poliſhed in the higheſt manner? In ſhort, their beauties are too many to be numbered; and when you come to be able to read books of natural hiſtory, you will be aſtoniſhed to find how much can be ſaid about them; but you are too young to underſtand them at preſent: However, I muſt not forget to tell you, that all flowers grow either from ſeeds, or little roots taken from great ones.

Few of thoſe which grow here would grow wild in the fields, becauſe the earth there

there is not rich enough for them. There is a great deal of trouble to make ſome of them grow at all; the gardener is obliged to do many things, or they would wither away; and particularly he muſt water them properly; for earth and water are the ſame to the trees, plants, and flowers, as victuals and drink are to us; but as they are fixed to one place, and can neither fetch nor aſk for it, it either comes to them in rain and dew, or the gardener pours it on them with a watering-pot.

Some tender, delicate plants will grow only in very light earth, for they could not get through hard ground, any more than you could break through a ſtone wall. Other plants are ſtrong and ſtiff, therefore light earth would crumble away, and leave the roots bare, ſo they grow beſt on clay: Some require a great deal of water, nay, grow even in ponds and ditches; others will thrive only in ſandy ground. Many curious plants are kept in green-houſes; they would not grow in the open air in this country, be-

cauſe

cauſe they are brought from foreign parts, where it is hotter than here: If you were to go to a place a great deal colder than this, you would not be able to bear it like thoſe who always live there.

From what I told you juſt now, my dears, you muſt underſtand that there is not only great variety in what grows out of the ground, but even in the earth itſelf. Look at the walks; ſome of them are of a yellowiſh red colour. That is gravel: does it not make pretty walks; it is exceedingly good for the roads likewiſe, Henry, which would ſoon be very bad where there are a great many carriages continually going, if they did not ſpread gravel upon them to keep them in repair. Of another kind of earth bricks are made, which are afterwards uſed in building houſes, walls, &c. Chalk comes out of the earth. That is very uſeful to lay upon ſome ſorts of land, in order to make what the farmer purpoſes to ſow there grow the better:

better: It is likewiſe burnt to make lime of, which, mixed with ſand, makes mortar for the bricklayers to faſten their bricks; for they would fall down if they were not cemented together. Stone and marble are dug out of the ground. When they find a great deal together, they call the place a quarry. Some fine churches and caſtles are built of ſtone. Marble is uſed for chimney-pieces, ſlabs, and ornaments, in elegant houſes.

Coals are likewiſe dug out of the earth, with which we make fires to warm us, and dreſs our victuals. Oh! how we ſhould go ſhivering and ſhaking about if we had no fires in the winter! And what would meat and puddings be good for, if we could neither roaſt, boil, nor bake? for we could not get wood enough for thoſe purpoſes.

I have not yet told you half the riches that are in the bowels of the earth. Out of them are dug gold, ſilver, copper, lead, iron.

iron, tin; theſe are called metals. Look at my watch; this is gold; guineas and half guineas are likewiſe made of it, and it may be beaten into leaves thinner than paper. Did I not give you ſome, Henry, to gild your oak-apple.

With leaf gold they gild wood; the picture frames in the drawing room appear very fine, but are only wood covered with thoſe thin leaves.

Gold is the moſt valuable of all metals. This ſhilling is made of ſilver, which, though inferior to gold, is yet much eſteemed. It is uſed for coffee-pots, candleſticks, waiters, ſpoons, and an hundred other things, which people of fortune make uſe of. Lead is very heavy: there is great plenty of it to be had, and it is of the utmoſt ſervice to us; for it is made into ciſterns to hold water; pipes to convey it from the ſprings; gutters to carry the wet from off our houſes; weights, and a variety of other conveniences. Our ſaucepans and kettles are made of copper, which would be very unwholeſome if they were not

lined

lined with tin; which is a whitiſh metal, ſofter than ſilver, yet harder than lead. We have many mines of it in England, and ſend a great deal of it to foreign countries. Half-pence are made of copper. Iron is one of the moſt ſerviceable things we have; moſt kinds of tools that are uſed in the fields and gardens are partly made of it; likewiſe moſt of thoſe which are employed in different trades have generally ſome iron about them; in ſhort, it would take up a great deal of time to tell you the whole of its value. Steel is iron refined and purified by fire, with other ingredients; it is much prized too. Our knives, ſciſſars, razors, needles, and many articles beſides, are made of it.

All kinds of precious ſtones likewiſe are found in the earth: diamonds, rubies, emeralds, topazes, &c. They do not look ſo fine when they are firſt dug up, but there is a deal of patience and labour required in cutting and poliſhing them. Look at the diamonds in this ring; you ſee they are cut with a great many ſides,

and

and the light falling on them makes the appearance of ſuch a variety of beautiful colours.

Now you ſee, my dears, that every thing, when we examine it, is curious and amuſing. None need go ſauntering about, complaining that they have nothing to divert them, when they may find entertainment in every object in nature: but I am ſure, if you are not tired, you muſt be hungry, and I fear the dinner will be ſpoiled, ſo let us make haſte into the houſe. You have been told enough to employ your thoughts till to-morrow, when we will take another walk, if nothing prevent us.

Good morning to you, Charlotte, have you ſeen Henry yet? I did not expect you quite ſo early; but hope it is a proof that my inſtructions were agreeable to you yeſterday: pray ſee whether he is up.

Are you not aſhamed of yourſelf, you little lazy boy, for lying in bed ſo late?

I was

I was obliged to ſend Charlotte to call you. Your ſiſter and I longed to be walking; let us therefore loſe no more time, but be gone.

There is the dairy-maid milking the cows. How comfortable the cattle look grazing in the verdant meadow! I dare ſay the herbage is as pleaſant to them as apple-pie is to you. See what charming thick coats they have got. As beaſts cannot make themſelves clothes, they have what anſwers the ſame purpoſe growing on their backs. All cattle have four legs; they do not walk upright, for that poſture would be both painful and inconvenient to *them*, whoſe food is on the ground, as they would be always ſtooping, which would tire them ſadly; and had they only two legs, they could not move their long heavy bodies with them. Obſerve what hard hoofs they have got. If they had not, their poor feet would be torn to pieces without ſhoes. Their great horns ſerve them for a defence, in caſe any thing

threatens

threatens to hurt them, for they cannot get guns, ſwords, or ſticks, you know.

Can you tell me what becomes of the cows and oxen; I am ſure you cannot, therefore ſhall inform you. Do not run away, Henry, ſee how attentive Charlotte is.

Cows, as you ſee, give milk; a great deal indeed, which ſupplies the dairies with cream; for it is put into great diſhes, and in about twelve hours the cream riſes thick on the top, which is ſkimmed off; when they have got enough of it, they put it into a churn, and work it about very faſt, by which means part of it becomes butter; the remainder is butter-milk, which is very wholeſome for little boys and girls.

Cheeſe is made from milk, and ſo are puddings too, with the addition of eggs, and flour, bread or rice.

The calves are the cows little ones, and many of them are ſold to the butchers, who kill them; their fleſh is called veal.

See that drove of oxen! do not be ter-

rified,

rified, Charlotte; obſerve how quietly they ſuffer themſelves to be driven along, ſo many of them by one drover! He will drive them to market, where the butchers will buy them: when they are killed, their fleſh will be beef, and their ſkins will be ſold to the tanners, who will make leather of them, and ſell it to the leather-dreſſers; then it will be bought by the ſhoe-makers, for ſhoes and boots; by the ſaddlers, for ſaddles, bridles, and other things. The horns of theſe beaſts are made into combs, lanterns, &c.

Look at the pretty harmleſs ſheep, with their innocent lambkins by their ſides. Sweet creatures! you alſo have got fine thick coats; they are very comfortable to you in the winter, when you are obliged to lie in the open fields in the froſt and ſnow, but muſt make you very hot in the ſummer. Well, a way is contrived to eaſe you of them; as ſoon as the ſultry heat comes on, the farmer will get you all to-

gether, and begin his ſheep-ſhearing; then all your load of wool will be cut off, and you will ſpring away from him, and run friſking and ſkipping about, like little boys who pull off their coats to play.

The poor ſheep would not be ſo merry if they knew that they ſhould be ſold to the butchers too, but that muſt be the caſe. Their fleſh will be mutton, and their ſkins will either be parchment, ſuch as Mr. Green, the lawyer, brought to your papa the other day, and like what your drum is covered with, Henry, or elſe leather, like the outſide of your ſpelling book.

The ſheep's wool is very valuable indeed, for it is ſold to the wool-combers, who clean it, and poor old women, who live in cottages, ſpin it with their ſpinning-wheels. Have you not ſeen Goody Newman ſitting at her work, ſinging, and happy to think that ſhe ſhould be paid enough for it to keep her from begging?

When the wool is ſpun it is called worſted, and the weavers make it into cloth for men's clothes, flannels, blankets, ſtockings, and

and other things: ſo that ſheep ſupply us both with food and raiment. But I dare ſay you think it very cruel to kill the poor creatures: Indeed, my dears, it is a pity; but if ſome were not killed there would be ſuch numbers that there would not be a ſufficient quantity of herbage for them to eat, and many would die of hunger; and now, whilſt they live, they are as happy as they can be, have fine green paſtures to feed and play in, and when they die, have no relations to be ſorry for them, or who will ſuffer by their deaths; becauſe, though ewes are very fond of their lambkins while they are little, the fondneſs continues no longer than while they are helpleſs; for when they have done ſuckling them, and ſhewn them what to eat, they drive them away, and take no more notice of them. When the butchers take the ſheep to the ſlaughter-houſe, they know not what is going to be done; and when their throats are cut, they are but a little while dying, therefore they do not ſuffer much. When they are dead, they can feel no more, you know.

know. We *muſt* kill them to preſerve our own lives, but ſhould never be cruel to them while they live.

Horſes are ſent to market, Henry, but not to be killed. Horſefleſh is not good to eat; it is carrion, and only fit for dogs and crows. Horſes are noble creatures. That is a riding horſe. See how he leaps and bounds now he is at liberty. But though he is ſo ſtrong, can kick hard, and raiſe himſelf upon his hind legs, he is ſo gentle that he will ſuffer himſelf to be mounted, and guided any way. His legs are ſlenderer, and his body not ſo heavy as the ox, ſo that he can move nimbly; neither is his back ſo broad but that a man can eaſily ſit acroſs it. He has hoofs alſo; but as he travels ſo much, they would be worn out, therefore all perſons who keep horſes ſhould be careful to let them have iron ſhoes, to keep their feet from being bruiſed. The ſmith makes them, and

nails them on, which, if done cleverly, does not hurt the horſes at all.

Don't you wiſh, Henry, that you could ride on horſeback? When you are old enough you ſhall be taught to ride, and learn to manage a horſe; but if you get on one by yourſelf, without knowing what to do, he may run away with you and kill you.

There was a little boy who wanted to ride, and had not patience to ſtay till his papa had brought a pretty little gentle nag for him; but got upon the ſervant's horſe, which was hung at the gate. He laid hold of the bridle, and could not reach the ſtirrups; gave the horſe a cut with a ſtick, and away he gallopped with him ſo faſt, that the little boy was thrown off with his head againſt a ſtone, which fractured his ſcull, and he was taken up dead: and yet that was not a vicious horſe, when he had a ſkilful rider on his back: the accident was entirely owing to the child's not knowing how to manage the bridle.

There was another little boy, who was always

always running into the ſtables amongſt the horſes, and one day he was kicked, and had his ribs broken, for the horſe did not know that it was a little boy at his heels.

Thoſe fine large bay horſes, with black manes and tails, are coach horſes; they are ſtronger, but not ſo nimble as the others; thoſe with great clumſy legs, and rough coats, are cart horſes. There is another ſort of horſes, which are very beautiful and ſwift; they run races, and carry their maſters a hunting; but it is very expenſive to keep them.

We can walk but a little way in a day, as we ſoon tire on foot; but when we are upon a horſe's back we can travel a great many miles, and ſee our friends who live at a diſtance; and it is very pleaſant to go in coaches, you know; do not you love it, Charlotte? Now theſe pleaſures we could not have without horſes; don't you think that we ought therefore to uſe them well? Beſides, we could not tell how to manage

many things without them, for it would be exceeding hard work for *ſtrong* men to do what horſes can perform with eaſe. It is extremely fatiguing to a poor boy, with his heavy nailed ſhoes, to walk by the ſide of a plough all day; but do not you think it would be a great deal harder to him were he forced to draw it along through the tough ground; and how would *Men* be able to move heavy waggons and carts, and other great loads, without the help of horſes? So I think that the leaſt we can do is to give them plenty of oats and hay, and a warm ſtable at night. Don't you think thoſe people are very barbarous who ride them too hard, who whip and ſpur them till they are ready to die? and yet ſuch cruelties are exerciſed every day; but remember, Henry, that it is both fooliſh and wicked to act in that manner.

There is a poor aſs; he cuts but a mean figure after we have been viewing ſuch beautiful fine animated creatures as horſes; but

but do not deſpiſe him on that account; he has great merit, I aſſure you, for he will do a deal of hard work, and it coſts but very little to keep him, as he will be contented with what the hedges afford, or even a few dry leaves, or a little bran: and requires no ſtable to ſhelter him, nor groom to attend him, ſo that poor people who cannot afford to keep horſes may have an aſs, and he will draw a cart, carry panniers, nay, will not diſdain to lend his back to a chimney ſweeper. Have you not ſeen the little grinning rogues, with their black faces and white teeth, riding on a jack-aſs, with a ſack of ſoot?

I muſt not forget to tell you likewiſe, that aſſes' milk is one of the fineſt medicines in the world, particularly for any one who inclines to a conſumption: many perſons who drink it get well, after they have been ſo ill that they were thought ready to die. Is it not very barbarous, think you, to treat ſuch valuable creatures with inhumanity? and yet it is very common to do ſo. I am ſure it would grieve you to

hear how people beat and ſtarve them frequently.

Let me look at my watch; it is paſt eight; we muſt return home to breakfaſt. Who is that? Oh! it is John coming to call us, and poor Tray with him. You are mightily glad to ſee us, Mr. Tray, and we are glad to ſee you too, for you are an honeſt, faithful fellow. Don't you love Tray, Henry? How he wags his tail, and jumps about. I proteſt he looks ſo pleaſantly, I could almoſt fancy he had a ſmile on his countenance. When we are in bed and faſt aſleep, he keeps watch all night, and will not let a thief come near the houſe. When papa goes a ſhooting and courſing, Tray runs about, round the fields, and acroſs the fields, and finds out all the game for papa to ſhoot; for he can ſmell it a great way off; then he is ſo good-natured that he will let the little baby play with him, and will never be perſuaded to leave his maſter.

Poor Tray deſires no other reward for his

his ſervices than a little food, and that he may have the pleaſure of walking out ſometimes with his maſter or any body in the family. I have got the key of the paddock, ſo we will go through it, and take a peep at the deer.

There is a noble ſtag, with his fine branching horns! Do not you admire him? and ſee the little friſking fawns! Active as you are, Henry, I think you cannot bound like them.

This kind of animals are only kept by thoſe who have parks and paddocks properly paled in, for they would not ſtay in the fields as cows and ſheep do. Their fleſh is very fine flavoured meat, called veniſon.

Gentlemen often take great diverſion in hunting ſtags. They turn one out of the park, and then let looſe a great number of dogs, of which he is ſo fearful, that he runs from them as faſt as his legs will carry him; a number of gentlemen on fine ſwift horſes follow him, and are ſo eager for the ſport that they leap over hedges and ditches

to overtake him. Sometimes he will lead them a great many miles; but at laſt his weary legs will carry him no farther, he pants with fatigue and apprehenſion, ſtops, and makes an effort to repel them with his horns; but the dogs ſeize on him, and tear him till he dies. I ſuppoſe there is pleaſure in hunting, but I think the poor creature ſhould be allowed to return to his park again, in order to make him amends for the terrors he muſt have ſuffered, and for the diverſion he has afforded to his purſuers.

Sometimes people hunt hares alſo. They go into the fields with their dogs, who can ſmell them out if they hide themſelves ever ſo cunningly; and when they find they are in danger of being caught, they ſpring up and run with all the ſpeed they can, and practiſe many tricks to ſave themſelves; but all in vain, for they are generally overtaken, and ſuffer the ſame fate as I told you the ſtags do.

I don't

I don't know how it is with the gentlemen, Henry, but I ſhould feel ſo much for the poor little frightened creature, as would deſtroy all enjoyment of the ſport. I am ſure it would delight me more to ſave one from its diſtreſs.

Well, now for breakfaſt.—Run into the parlour, Henry; ſee, Charlotte! there is a good baſon of milk for each of you; I dare ſay your walk has given you an appetite. There is nothing like air and exerciſe for improving health and cheerfulneſs.

Whilſt you eat your breakfaſt I will tell you a piece of news; your favourite Tibb has got kittens, Charlotte; there they are in a baſket. Call her out to lap a little milk, and then we can look at them. How they mew and tumble about! They cannot now ſee, but in nine days their eyes will be open, and they will ſoon begin to play a hundred diverting tricks. When old puſs has taught them to catch mice, ſhe will make them provide for themſelves, and ſo far from giving herſelf any trouble about them, will grumble, and give them a good

box on the ear, if they take any freedoms with her; but ſhe will be a good mother to them for all that; for ſhe will be extremely tender of them as long as they ſtand in need of her care, and they have no reaſon to expect her to catch mice for them all their lives, when they will be as clever at it as herſelf.

Mice are pretty creatures to look at, but they do a great deal of miſchief; and ſo do rats. If we had not cats we ſhould be overrun with them.

I ſhould never have done were I to enumerate every kind of animal; but muſt not forget to mention that there are a great number of *wild* beaſts; lions, tygers, leopards, panthers, wolves, and others.

They have great ſtrong claws, monſtrous teeth, and are ſo fierce that they can tear a man to pieces in an inſtant. Now, had they been amongſt us like the flocks and herds, what havock they would have made in the world! We ſhould not have dared to go out of doors. The cows, ſheep, and horſes, would have been a conſtant prey to them:

them: but there are none here; they avoid the habitations of men, and range the foreſts and deſerts far from our abodes.

As their ſkins make very comfortable clothing for people who live in cold countries, the hunters frequently purſue them; for as there are ſeldom many wild beaſts together, and there are uſually a number of hunters, who provide themſelves with proper weapons, they frequently get the better of them.

Sometimes they are caught alive when they are young, and ſhewn about as curioſities; and thoſe who look after them have a way of managing ſo as to cure them in a great meaſure of their fierceneſs: there is no beaſt whatever ſo fierce but it may be tamed or ſubdued by men. I have ſeen ſeveral ſorts, particularly at the tower of London, and read a very entertaining account of that collection in one of Mr. Newbery's little books: I think you have got it, Charlotte; I deſire you will ſhew it to Henry.

The elephant is a moſt aſtoniſhing creature, I believe, the largeſt of all beaſts.

Remind me, when we are in the library, to ſhew you the picture of one; and as ſoon as I have an opportunity I will take you to Mr. Parkinſon's Muſeum, where you will ſee an elephant and many other curious things; their teeth are very valuable. They are ivory, and you know there are abundance of things made of that. You have ſeveral pretty ivory toys, and there are combs and knifehandles; in ſhort, one might ſoon name twenty things made of ivory.

The ſkin of elephants is extremely hard, and their ſtrength wonderful, ſo that when they are provoked, nothing can ſtand before them; yet they are of a very gentle, harmleſs nature, and will ſubmit to be guided by a man. We read in hiſtory, that it was formerly the cuſtom to employ elephants in armies; and that they had little wooden caſtles built on their backs, which were filled with men, who ſhot from them with bows and arrows. When theſe beaſts had been ſome time in the battle they grew angry, and then they trampled to death all who

who came in their way, and could even beat down trees and demoliſh houſes. How would you like to ride on an elephant, Henry? Why, you would look on his back like a little marmoſet on a horſe.

The camel is another noble beaſt; we have none of them here, only now and then one, which is ſhewn about as a ſight. You can form no notion of him from a deſcription, but I will look for a picture of him likewiſe.

In the countries where the camels are, there are a great many ſandy deſerts; places where there are no houſes for a great many miles, nor a tree to ſhelter travellers from the ſcorching rays of the ſun; and yet people are under the neceſſity of taking journeys through them, in order to carry the goods they want to ſell from one country to another: it would be impoſſible for them to bear ſuch heavy loads themſelves, and horſes would periſh with thirſt, as there is no water to be met with; but a camel will carry very great burdens, and requires no refreſhment on the road; and when he gets

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to his journey's end will kneel down, that his maſter may be able to reach his back to unload him; for he is ſo tall, that it could not be conveniently done otherwiſe. I could tell you wonderful things of an hundred other creatures, but that I hope you will have curioſity enough to read about them.

If you have breakfaſted, and are not fatigued, we will go into the poultry yard. You, Charlotte, ſhall carry ſome barley, and Henry ſome tares, and I am ſure we ſhall be welcome viſitors.

See what a fine brood of chickens that hen has got; and ſhe takes as much care of them as a fond mother does of her children. Do not attempt to catch her chickens, Henry, for ſhe will fly upon you. Yeſterday they were in the egg-ſhell; ſhe laid them in a neſt in the hen-houſe, ſat upon them three weeks, and would ſcarcely come off to eat, for fear they ſhould periſh for want of being kept warm. As ſoon as they

they were ſtrong enough, they broke the ſhell and came out, and ſhe gathered them under her wings; now ſhe is teaching them to peck and ſcratch; and when ſhe fears that any thing is going to hurt them, ſhe flies at it with the fury of a lion. Poor hen! what will you do now? There is a hawk; oh, how the poor creature is terrified! the little chickens throw themſelves on their backs, expecting to be caught up by his talons, and the hen runs about in agonies; for he is too powerful to conteſt with. Go, Henry, call Thomas, and deſire him to bring his gun immediately. Poor hen! the hawk ſhall not have your chickens. Now, we have driven him away, come and eat your barley.

We want ſome eggs for cuſtards, Charlotte, ſee if there are any in the hen's neſt. Oh, you have found ſome; theſe are new laid; there are no live chickens in them yet, but were we to let them remain for the hen to ſit on, ſome would grow withinſide, and ſhe would hatch them. But we want eggs for many uſes, and were they all to

be

be hatched, there would be too many fowls. All kinds of poultry and birds come out of eggs.

It is poſſible to hatch chickens in ovens. And I have read, that in Egypt this is a common practice, and that as ſoon as the young chickens come out of the ſhell they are put under the care of a fowl, which, having been trained to the buſineſs, leads them about, ſcratching for them with the ſame anxiety that a hen would do. This is certainly a wonderful thing; but, for my part, I do not approve of ſuch unnatural proceedings. I am ſure we may have a ſufficient number of eggs and chickens in the uſual way if we manage them properly. It appears to me a robbery to take the chickens from their parent, and put them under a fowl which provides for, and protects them only becauſe it is his buſineſs to feed and attend little chickens. It is like taking a child from its mother, and putting it to nurſe, without her conſent, in a place unknown to her. But I have the pleaſure of

hearing

hearing that hatching chickens in ovens has been tried in England and rejected.

There is another fooliſh cuſtom, which is indeed very common here; I mean that of putting ducks' eggs to be hatched by a hen. You can ſcarcely conceive the diſtreſs it occaſions. The hen, not conſcious of the exchange that has been made, ſuppoſes ſhe has hatched her own chickens; for ſhe has not ſenſe to reflect on theſe matters; therefore, when ſhe ſees them go into the water, as it is their nature to do, ſhe is ſeized with the moſt alarming apprehenſions leſt they ſhould be drowned, and yet dares not attempt to follow them, as ſhe is not able to ſwim. I am ſure you would pity the poor creature; therefore never make ſuch experiments, as they only ſerve to gratify curioſity by proving, that it is warmth that hatches eggs.

It grieves one to be obliged to kill any of the poor chickens; but, as I told you in reſpect to the ſheep and oxen, were we to ſuffer them all to live they would die of hunger, and cauſe us to do ſo too, for they would

would eat up all the wheat and barley, and we ſhould have neither bread or meat for our uſe. But we will take care to feed them well, not hunt them about; and put them to as ſhort pain as poſſible. I am ſure I could not kill a chicken; but ſomebody muſt.

The feathers of geeſe and chickens are what our beds are filled with.

Don't be afraid of the turkeycock, Henry; he is a ſaucy fellow, but has very little real courage. Turn towards him, and he will run away from you as you did from the man who held up his ſtick at you for flinging ſtones at him.

Chickens and other fowls have very ſharp claws, that they may ſcratch about in dunghills, and at barn-doors, where they uſually find plenty of food; beſides, their feet have ſeveral joints to them, ſo that when they ſleep at night they ſtill hold faſt round the rooſts, and preſerve themſelves from falling. Water-fowls uſually ſit on

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the ground to ſleep. They endeavour to find a ſnug corner; but a little damp does not injure them.

Cocks are noble birds, and very fierce; ſometimes they will fight till they kill one another; and there are people in the world who are cruel enough to make them do it for their own diverſion.

They get two of theſe fine creatures, and faſten to their legs ſharp ſpurs made of poliſhed ſteel; then they put them in the middle of a round place, covered with turf, called a cockpit, where they ſtand about them, hallooing, ſwearing, and ſaying ſhocking wicked words, whilſt the cocks fight till one of them dies. Oh, Henry! I hope you will never take pleaſure in ſuch barbarous ſports. I can ſee that your tender heart is moved with the bare relation of it. I could tell you many ſtories of the bad conſequences of cock-fighting, which has frequently been the ruin of thoſe who were fond of it; but hope, before you are a man, you will entertain ſuch ſentiments

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as will effectually preſerve you from the danger of practiſing it.

I will tell you of another kind of barbarity which is practiſed by cruel wicked boys on cocks. On a particular day in the year, called Shrove Tueſday, they aſſemble in parties, and fling cudgels at theſe poor harmleſs creatures, till they kill them. Firſt one little tyrant throws at a cock, and perhaps breaks a leg; this is mended, as they call it, with a piece of ſtick tied to ſupport it; and then the next boy flings, who, it is likely, may knock out an eye; another blow perhaps breaks a wing; and ſcarce a ſtroke fails of cruſhing ſome of its tender bones; as long as ſtrength remains the tortured bird attempts to eſcape from his tormentors; but continued agony ſoon obliges him to drop. If he diſcover the leaſt remains of life he has ſtill more to endure; for they run his head into the ground to recover him, as they ſay; this makes the creature ſtruggle; and he is ſet up once more: a few blows now complete the cruel ſport, and he drops down dead, whilſt his murderers

murderers exult over him, and call themſelves very clever fellows! What do you think of ſuch boys, Henry? Is there not a great deal more pleaſure in ſeeing the happy creature pecking at the barn-door, ſtrutting on his dunghill, clapping his wings, and crowing with joy, than to ſee his noble courage ſubdued in this manner: his bright eyes hid with a deadly film, and his beautiful plumage covered with dirt and blood.

See that ſtately ſwan, how magnificently he ſails along, with his ſilver wings expanded to catch the freſh breeze. And pray obſerve his mate, with what pride ſhe leads forth from the neſt her new hatched cygnets! Of all the water fowls I ever ſaw the ſwan appears to me the moſt beautiful.

That ſimple looking gooſe cuts but a mean figure in compariſon of a ſwan. Obſerve how ſhe hiſſes and waddles along! However, we muſt not deſpiſe any thing merely for its looks: geeſe are very uſeful creatures,

creatures, and we are in ſome meaſure obliged to them for all the learned and entertaining books we have, ſince they were originally written with pens made of quills taken from gooſe-wings; beſides geeſe afford us many excellent meals; for when roaſted they are very good eating. This gooſe, you ſee, has got a numerous brood of goſlings; and here is miſtreſs duck too, with a fine train of ducklings; now they go into the pond; now they ſwim away: they are amphibious; that is, they can live either on land or in water. Obſerve the feet of the geeſe and ducks. It is the ſame with every other water-fowl; they are webbed, and ſo ſerve like oars you have ſeen the watermen uſe to row with.

There is another kind of birds, called birds of paſſage, ſuch as quails, wild ducks, plovers, woodcocks, ſwallows, &c. theſe do not conſtantly reſide in one place, but go from country to country at particular ſeaſons of the year. They all aſſemble together on a certain day, and take their flight at the ſame time. Some croſs the

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ſeas and fly many hundred miles, which is very wonderful.

Pray look at the peacock. Did you ever ſee a more beautiful ſight? He ſpreads his reſplendent tail which the ſun ſhines on, and ſhews it to perfection. There is one of his feathers on the ground. I deſire you both to examine it particularly. The nearer you look at it the more admirable it ſeems.—And pray pick up ſome of thoſe which the pigeons and other poultry have dropped; you will find them worth examining. I would have you accuſtom yourſelves to look at every thing; that is the way to gain knowledge.

Did you ever ſee any gold and penciled pheaſants? They are charming creatures. All birds, I think, are pretty; even the owl and the crow are not to be deſpiſed when you ſee them near. But if you are not ſatisfied with the little information I have given you, we will read ſome books of natural hiſtory, and go to the Muſeum over

Black Friars Bridge, where you will ſee a moſt beautiful collection.

There are many ſorts of birds in this country, and numbers different in other parts of the world; but I ſhall not at preſent give you a deſcription of them all, becauſe you muſt take the pains to read about them yourſelf. I ſhall only mention the humming bird and the oſtrich.

One ſpecies of the humming bird is a little creature, ſcarcely bigger than an humble-bee, and ſo beautiful, that ladies in the country where they are wear them in their ears for ornaments. The oſtrich is remarkably large, and ſomething reſembling a gooſe, but taller a great deal than a man: their eggs are ſo big that I have ſeen drinking-cups and ſugar-diſhes made of their ſhells, and their feathers are very fine. Thoſe beautiful ones, which have lately been ſo much in faſhion, are oſtrich plumes: and ſo are thoſe fine black ones which are put upon a hearſe. Theſe birds are too heavy to fly, but they have ſhort wings, which are of great uſe in helping

them along; and they run with ſurpriſing ſwiftneſs.

They do not ſit upon their eggs, but leave them to be hatched by the ſun.

I muſt go into the houſe now, ſo pray take leave of theſe favourites of yours for the preſent.

There is little Dick Williams coming in at the gate; I fancy he has ſomething that he thinks will pleaſe us. What have you got there, child? a bird's neſt! oh, fie upon you, to rob the poor things of what coſt them ſo much pains to make. The young ones, you ſay, are flown; well, Henry, take it in your hand, and I will tell you how the birds build it.

Two of them agreed to live together; for though they cannot talk as we do, they can make one another underſtand; ſo they ſet about building them a houſe. Firſt, they got ſome ſmall ſticks and hay, then, in a ſnug place, which was not likely to be found out, they began the outſide, then

they picked up ſome moſs and horſehair; after all, they lined it with feathers, the hen-bird laid her eggs, and her mate ſang to her whilſt ſhe ſat over them; at laſt came out the little birds, and away flew the old ones to get food for them. As ſoon as they had found any they came hurrying with it to the neſt. When the young ones heard the ſound of their parents' wings, they chirped, and opened their mouths, as much as to ſay, "*feed me, feed me.*" The old birds fed them one after the other. Sometimes the hen ſat upon them a little while to warm them, then abroad ſhe went for more food, and ſo the old birds kept on till the young ones were ſtrong enough to fly, when they went along with them to ſhew them where to get food, and how they muſt ſhift for themſelves, and all their care about them was over. As ſoon as the little birds are big enough they will build neſts too, and do as their parents have done.

I am always angry with thoſe who take birds' neſts, when I think how many miles the poor creatures may have flown to procure

cure the materials, and how hard they muſt have worked with no other tools but their beaks and claws to build with.

We ſhould not like to be turned out of a comfortable warm houſe ourſelves, though few of us have the ingenuity to build one. The farmers indeed find themſelves under a neceſſity of deſtroying ſome kinds of birds for eating the corn; and hundreds are killed on that account; beſides, there are great birds, ſuch as hawks and kites, which devour a great many, ſo they have enemies enow without little boys. For my part, I would willingly ſpare them ſome of my fruit to pay them for their muſic, and would not have my ſweet blackbird killed, which ſings ſo charmingly in the orchard, were he even to eat up all the cherries.

You have got a canary-bird in a cage, Charlotte; I hope you take care to feed him well, and keep him clean. He never knew what liberty was, and therefore does not want it; nay, if you ſhould turn him

looſe, he would ſtarve and die; beſides, he could not bear the cold air out of doors in the winter, becauſe canary-birds were firſt brought here from a hotter country, and only build in houſes. But ſhould you catch a poor bird which had been uſed to fly about, hop from twig to twig, and ſing amongſt the branches, he would at firſt flutter, and almoſt beat himſelf to pieces againſt the wires of the cage; and when he found he could not get out, would ſit moping in a corner, and refuſe to eat or drink, till extreme hunger and thirſt obliged him; and long would it be ere he would be reconciled to confinement.

I knew a little boy, who was otherwiſe good, but ſo exceedingly fond of birds, that he would try every means in his power to catch them. One day he had fixed ſome traps made of ſticks and bricks, and being called away to go to ſchool, forgot to mention his traps. He did not come home till a week afterwards, when the firſt news he heard was, that a poor robin had been caught in one, where he remained till he

was

was ſtarved to death; a ſparrow was cruſhed to pieces, and another had his leg broke: Now, would not any good little boy have been very ſorry to have tormented the poor things in this manner? And ſo was he, and I hope has never caught any ſince. But I muſt leave you now, for I have many things to do; and ſo good bye to you.

The weather continues ſo remarkably fine, Charlotte, that I long to be abroad. Do you vote for a walk? Henry, I am ſure, will attend us; ſo let us equip ourſelves and be gone.

What is Henry running after? Oh! it is a butterfly, I ſee; well, you have caught it, poor little tender creature! take care how you handle it; would you believe it? all that powder, which comes off on your fingers, is feathers. I have ſeen ſome like it in a microſcope, and will ſhew ſome to you by and by.

Try if you can find a caterpillar. Why,

you have got ſeveral ſorts! well, I have a long hiſtory to tell you about them when we go home. See what a neſt of little ones are in that web in the hedge: As ſoon as they were big enough to go to work, they ſpun it to keep the wet off; the dew, you ſee, hangs without ſide, and does not penetrate through. There are more! Sure, there are thouſands! We have had ſuch dry weather lately that I fear the gardens and fields will be over-run; they will deſtroy all the cabbages; the birds may feaſt away, for they eat caterpillars, as the larger birds deſtroy *them.*

Behold what a ſwarm of very minute inſects are there, like a cloud before us! You would ſcarcely ſuppoſe that theſe little creatures, when ſeen with a magnifying glaſs, are very beautiful, and adorned with magnificent fringes as fine as gold and ſilver, with elegant tufts of feathers; and ſome parts appear like velvet embroidered with pearls. Every one of them is furniſhed with weapons of defence, and all have enemies to defend themſelves againſt;

each

each has ſome particular plant or herb to feed on, and knows where to ſeek it. There are ſome ſo exceedingly ſmall that they cannot be ſeen at all with the naked eye, but when ſeen, are as wonderful as the reſt.

Look how buſy that ſpider is at her work. Your ſilly maid has taught you to be afraid of ſpiders, but I hope you have both of you ſenſe enough to get the better of ſuch ridiculous fears. Pray conſider how much ſtronger you are than they, and how much larger. It is true they will ſometimes drop down ſuddenly, but that is from fear of your hurting them: how often are their neſts and webs cleared away? But I never heard that a ſpider took a broom and ſwept a little boy away, or trod one to death. I deſire you both to take notice, that when a ſpider drops down it always runs away as faſt as it poſſibly can, therefore certainly has no deſign againſt you. I tell you what, as they dirty our houſes, and cobwebs have a very untidy appearance, I muſt deſire that the houſe-maid will keep them away; but I am ſure little boys and girls may take a

good leſſon from ſpiders, and learn both induſtry and exactneſs; for their webs are woven with the moſt perfect regularity. You will be exceedingly pleaſed to read an account of their method of working, and I ſhall ſhew you parts of them in the microſcope.

Take care, take care, Charlotte, mind where you tread! why you might have deſtroyed a city for aught I know. Look at thoſe little buſy ants; they are at work as hard as poſſible. Do you know that they get all the corn they can, and lay it up againſt the winter comes? They bury their dead, carry their young ones about, and do many laborious things. If all men and women were as provident as they are there would not be ſo many beggars.

Let us go and ſee the bees at work in their glaſs hives. See, they are in a great buſtle: ſurely there is ſome curious work going on. Curious indeed, my dear! all the honey and wax we have is the work of

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theſe little creatures. They fly about, and with a kind of trunk they have they ſuck ſomething ſweet out of the flowers; others get materials for the wax, and form the honey-comb, in which the honey is depoſited. Are they not very ſurpriſing? The cells join exactly together; there is no room loſt. This whole ſwarm of bees are ſubject to one bee, which we call the queen; they follow her wherever ſhe goes, and will ſuffer themſelves to be killed ſooner than forſake her. But I muſt not tell you every particular about them, becauſe I want you to read the account yourſelves in the books I mentioned to you. Moſt people keep bees in ſtraw hives, and burn them as ſoon as they have finiſhed their combs, in order to get their honey; but I bought theſe glaſs ones on purpoſe to have the pleaſure of ſeeing them work, without being obliged to kill them. When the honey is taken you ſhall ſee how it is managed, and I will treat you with ſome for your ſupper. Should you at any time have a cough, or ſore throat, I will make a medicine, with honey in it,

which will help to cure you: So pray remember how uſeful bees are, and never hurt them. Keep in mind alſo, that not even the leaſt of theſe creatures, which I have ſhewed to you, is idle; all are employed. They do not ſaunter away their time, but take care of their families, and build houſes. The young ones learn readily what the old ones ſhew them how to do; and little boys and girls ſhould likewiſe be deſirous of improving from the inſtructions that are given them. It is a great deal of trouble to teach children all that is neceſſary for them to learn, and very expenſive. If they do not accept of knowledge when it is offered, people will grow tired of inſtructing them; and they will be laughed at and deſpiſed for their ignorance. The days paſs heavily along, when ſpent in idleneſs and folly. You may now go and divert yourſelves as you pleaſe, and in the afternoon come to me again.

See, I am prepared for you; here is the microſcope; in it is a magnifying glaſs, that is, a glaſs which makes every thing appear larger than it does to the naked eye; ſome magnify a great deal more; but this will anſwer our purpoſe. Now ſome of the wonders I told you of will be preſented to your ſight. In this box are a ſet of objects ready prepared for us. Now the glaſs is fixed. Pray, ſir, let the lady look firſt; if you are a philoſopher, do not forget you are a gentleman. Can you gueſs what this is, Charlotte? Do you look, Henry. It is only *part* of a feather of a gooſe, but appears like an *entire* one. This is a bit of a peacock's, examine it before I put it in; now view it, and you will perceive it to be perfectly beautiful. I am going to ſhew you the feet, wings, and head, of a common fly; this is its leg, ſee the claws; the head appears to have an hundred eyes. I muſt ſhew you the parts of a bee. See what a dreadful weapon the ſting appears. Ah! Henry, I hope you will be cautious how you catch bees again: and I am ſure you

will not take a pleaſure in tormenting flies now you have ſeen what limbs they have. You may aſſure yourſelf that they ſuffer great agony when their wings and legs are torn off. I never could endure, without great uneaſineſs, to ſee a cock-chaffer ſpinning, as they call it, on a pin. The noiſe and humming it makes is its way of crying and groaning. Let me beg of you, therefore, Henry, if you wiſh to be thought a boy of a generous ſpirit, never to take pleaſure in hurting any thing that is leſs and weaker than yourſelf. Think how you ſhould like to have a man tie a ſtring about you, and pull you along, whirl you about in the air till you loſt your ſenſes, break your limbs, and perhaps throw you down at laſt, and tread upon you.

I muſt ſhew you this bean; you know I told you that all plants grow from ſeeds; this is the ſeed of a bean. I have ſplit it open, and at bottom you may ſee the little plant. It is at preſent too tender to bear the earth next to it, ſo you ſee it is provided with a covering. The white part of

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the bean will nouriſh the plant till it is ſtronger, when it will ſpring out, and the white will drop off, and leave it to the earth, where it will increaſe every day till it grows up and comes to perfection. It is juſt the ſame with all vegetables, from the humble graſs to the ſtately oak; only in very little plants, we cannot diſcover them without exceeding good glaſſes.

I had like to have forgot this butterfly's wing; there you ſee the holes where the quills came out, and here ſome of the bits of duſt, which you may convince yourſelf are actually feathers. I muſt ſhew you this little inſect, which came off a roſe leaf; and here is a drop of vinegar full of little things like eels.

You muſt not pore too long, for it will hurt your eyes. I have only ſhewn you theſe, to convince you that a curious ſearch may diſcover new wonders; and were you to keep on to the end of a long life, you would not ſee them all.

What does your brother ſay, Charlotte? That he wiſhes his eyes were microſcopes.

Alas,

Alas, my dear boy! you know not what you wiſh for. If that was the caſe we ſhould ſee very ſurpriſing things to be ſure; but then, what we now look at with pleaſure, would become monſtrous to us. Men and women would appear ſo large that we could only ſee a bit of them at once. We ſhould not know a houſe from a wall, an ox from a mountain, and ſhould be involved in a thouſand difficulties. If we came to a kennel, we might miſtake it for a river; take a cat for a tyger, a mouſe for a bear: in ſhort, abſurdities out of number would follow. So reſt contented that your eyes can ſee with eaſe every thing that is uſeful or hurtful to you; and if you want to be curious, there are glaſſes, you know, to aſſiſt you.

I promiſed you the hiſtory of caterpillars, and make it a rule never to break my word, ſo pray attend to me.

I believe I muſt fix upon ſilkworms, becauſe they are the moſt uſeful to us. Firſt

of

of all they are in little greyiſh eggs, which may be laid by in a drawer till warm weather comes the next year, when they muſt be put where the ſun ſhines hot; in a little time they break, and out come ſmall grey maggots; thoſe who keep them pick them up, and lay them upon mulberry leaves; they grow apace, for they eat all day long; in a few days the ſkins come off, and they look a little handſome when they have got new ones: Soon after they change them again, and then are pretty white worms, larger than before, as big as one of your fingers. They ſoon begin to look yellowiſh, leave off eating, and go to work: firſt they ſpin a ſort of wool, then they form a ball the ſize and ſhape of a pigeon's egg, and are quite hidden from our ſight; but their buſineſs is not yet complete, they make a lining withinſide, a great deal cloſer woven than the cloth of a man's coat.

Their ſilk is extremely valuable, and all the fine clothes which ladies wear are the works of theſe little crawling inſects. Who would be proud of being dreſſed in ſilks

and

and ſatins, when they know this to be the caſe?

A great many of the balls are put into warm water, and thoſe who are uſed to the buſineſs readily find the ends. They are obliged to put ſeveral together to make the ſilk of a proper ſize, and they wind it off in ſkeins upon a little reel; then they come to the linings I told you of, which they cut open with a pair of ſciſſors, and uſe them for making artificial flowers. But what do you think they find withinſide, ſilk worms? no, nothing the leaſt like them, but cryſalids, as they are called. A cryſalis is a brown thing the ſize of a ſmall bean, ſomewhat of the ſhape of a barrel, no head, no legs, no body to be ſeen; but if you touch it, one end will move a little, which ſhews that it is not quite dead. In this ſtate it lies ſome days, and then breaks forth a large white moth with two black eyes, four wings, long legs, and a body covered with feather; view it through a microſcope, and you might take it for a chicken. Is it not very aſtoniſhing? It truly is, but not

more ſo than many other things. Almoſt all things in nature, whether they have life or not, undergo as ſurpriſing changes.

You want to keep ſilk worms, Charlotte; I am always glad to indulge you when I can, and will let you have a few next ſummer, becauſe I could wiſh you to ſee theſe curioſities yourſelf; but you will never be a ſilk-merchant, nor will it anſwer to ladies to keep a great quantity of the worms. Beſides, they are reckoned unwholeſome when there are many of them together; and it is dirty troubleſome work to change the leaves they feed on twice a day. The caſe is different in thoſe warm countries where they are on mulberry-trees in the open air, help themſelves, and ſpin amongſt the leaves. It muſt be a pretty ſight to ſee the ſhining balls, like golden plums, amongſt the green branches.

All butterflies and moths undergo the ſame changes, though they do not all ſpin ſilk: ſome creep into holes in walls, others into houſes, and ſome into the earth, and there become cryſalids, and remain in that

ſtate

ſtate from the end of one ſummer to the beginning of the next, when the butterflies come out in all their variegated beauties, and, inſtead of crawling about, ſoar in the air, and amuſe themſelves with flying from flower to flower.

AN

Eaſy Introduction, &c.

PART II.

COME here, Henry and Charlotte, look at this globe. Do you know what it was made for? Why, ſmall as it is, it repreſents the whole earth.

When you were very little children, I dare ſay, you thought the world was no bigger than the town you live in, and that you

you had ſeen all the men and women in it; but now you know better, for I think I have told you that there are thouſands and ten thouſands of people; you have ſeen a great many at church, but they are only a ſmall number of what the earth contains. When you go to London you will be quite aſtoniſhed at the multitudes, for they crowd along the ſtreets in the city like bees in a hive, and are as buſy too.

The *world* is an exceeding large *globe*, and *this* before us is a kind of *miniature picture* of it. You ſee here vaſt numbers of lines drawn; one part is painted *blue*, another *red*, another *yellow*, another *green*; they ſtand for different kingdoms.

It is not poſſible to draw every part of the *great world* on a *globe*, any more than it was for the painter to mark every hair of the eyebrows on this ſmall picture in my bracelet. Here is a *pea*; now you ſee this is of the ſame form as the *globe*, but we ſhould not be able to deſcribe ſo much upon it, and yet we might repreſent the large *green* and *yellow places*, &c. by dots of different colours,

colours, and call them *England*, *France*, and ſo on, juſt to ſhew what ſituations thoſe kingdoms have.

In the ſame manner then as the *pea* reſembles the *globe*, the *globe* reſembles the *world*.

The earth is not ſmooth and even, as this *globe* is; becauſe there are many mountains and hills on it; but though we call them large, and ſo they are to ſuch little creatures as us, they are no bigger, in proportion to the earth, than grains of ſand would appear here; therefore we ſay it is round.

Neither is the world all land; for there are vaſt hollow places between the different kingdoms, and they are filled up with water. The largeſt waters, ſuch as this on the globe, are called oceans, leſſer ones ſeas, and there are others yet ſmaller, which run in among the land, that are called rivers; there are, beſides, ſmaller pieces, called ponds, ditches, brooks, and others, which are uſed for ſupplying us with what is neceſſary to boil our meat, brew beer, clean

our

our horſes, water our gardens when there is a want of rain, and likewiſe for the cattle, and other living creatures, to drink. Theſe generally ſpring out of the earth, and are at firſt only little ſtreams, but run along till they join with others, and are increaſed by the rains that fall, and ſo in time become great rivers like the Thames.

As the land is full of living creatures, ſo are the waters, for they abound with fiſh, many of which are caught for us to eat. Some people are very fond of angling with a line and a hook, but I cannot help thinking it a very cruel ſport, and always was of opinion that it is an idle one alſo, and never had patience to follow it. To ſit hour after hour watching a floating quill! what an employment!

I was told of a gentleman, who, after ſitting a whole day in a mizzling rain, was aſked by a friend that ſaw him in the evening what ſucceſs he had had? Fine ſport! fine ſport! ſaid he, three bites and a nibble. I ſhould have caught one fiſh, only my line broke, and it ſwam away with the

hook. This perſon might truly ſay, indeed, that he had done no harm, but, in ſo many hours, how many good actions might he have performed! If none ſhould reſt contented without endeavouring to improve their time, what do they deſerve who trifle it away!

Now let us have another peep at the globe. See what a great part of it is water. Now ſuppoſe we were to take a number of thoſe mites which I ſhewed you to-day in the cheeſe, and ſet them to crawl about the globe, they might ſerve to repreſent the men and women that inhabit the earth. As there is no real water on the globe, only a picture of it, the mites might go which way they pleaſed; but ſuppoſe the places which ſtand for water were really dug hollow, and made into little ſeas and rivers, how would they contrive to get acroſs them to any other part which the water came in betwixt? It is the ſame with us, for we ſhould never be able to reach parts beyond ſea unleſs there was a contrivance to croſs it.

This place is Great Britain, the kingdom we live in; you ſee it is quite ſurrounded with water. Now, ſuppoſe we wanted to go to France, what could we do? Why, firſt we ſhould travel either in a coach, chaiſe, on horſeback, or ſome other way, to Dover, for it is too far to walk thither. At Dover we ſhould meet with a packet-boat, that is, a ſmall veſſel, which carries letters and paſſengers to France; as ſoon as the wind was fair for us we ſhould ſail away for Calais, as you have ſeen the pleaſure boats do. Then we ſhould go on by land from one place to another, till in time we might reach the city of Paris, where we ſhould find as many people as in London and ſee a great number of fine things. In this route we ſhould paſs through French Flanders, the country where cambrick and lace are made.

Were we to talk Engliſh in France none would underſtand us, ſo we muſt learn to ſpeak French before we go, or they will take us for vulgar, ill bred perſons, becauſe

it

it is known that all genteel people in England learn that language.

When we had ſeen one foreign country it is moſt likely we ſhould wiſh to ſee others, therefore we might go into Italy; and, as we travelled through the ſouth of France, we ſhould ſee a great many vineyards, which are fields planted with grape-vines: you know that wine is made from the juice of grapes. We ſhould alſo viſit places where ſilk-worms are kept; and you would find that they produce ſuch quantities of ſilk as furniſh a very conſiderable trade. We might travel by land from France to Italy, but muſt paſs over ſome high mountains, which divide Italy from France, called the alps, the tops of which are always covered with ſnow, and there is a great deal of ice on them all the year round.

You have ſeen in the winter both ice and ſnow, but did you know that they were only water? The ſnow would have been rain, only the air being exceſſively cold, made it

freeze in falling; but as ſoon as the weather became warmer, it diſſolved, and the ice thawed, as we call it, and then both were water again.

After this fatiguing and frightful paſſage over the alps, where you would be in danger every minute of falling down dreadful precipices, and of being daſhed to pieces, but that the men who carry you are uſed to the ground, and can run as faſt on it as you have ſeen little boys do on a wall: After this, I ſay, you would arrive in Italy, and there the beautiful appearance of the country would quite tranſport you; for it is deſervedly called *the Garden of the World.* There are myrtles and orange trees growing wild in the hedges, as the hawthorn does here. Don't you wiſh we could make ſuch hedges in England? Should we attempt it, Charlotte, I fear the firſt winter would entirely deſtroy them, becauſe the air is ſo much colder here than it is there. You know the gardener always carries the myrtles and orange-trees into the green-houſe in the winter.

The fruits in Italy ripen much better than ours do, and therefore have a richer flavour; and they have in great plenty ſeveral ſorts which do not grow here, particularly abundance of olives, which, when pickled, many people are very fond of; beſides, there is a great deal of oil made from them, part of which they ſell to us, and is what we dreſs our ſallads with. There are ſilk-worms in Italy alſo, on the mulberry-trees. The ſky in that country is moſtly of a fine blue colour, and the ſun ſhines brighter than it does here.

The houſes are very magnificent, and moſt of them large; ſome are built of marble, for they have a great many quarries of it, and their churches are moſt magnificently adorned with fine pictures, large ſilver croſſes, candleſticks, and a thouſand other curioſities, particularly the noble buildings which were erected a great many years ago, and are now falling to decay, which occaſion many people to travel thither in order to ſee them.

But, amongſt the curioſities of Italy, I muſt not forget to mention mount Veſuvius, a large mountain, which ſometimes burſts out with an aſtoniſhing noiſe much louder than thunder, and caſts forth flames, with hot aſhes and cinders, many miles diſtant; numbers of houſes are ſometimes deſtroyed, and people are killed by theſe eruptions. A fiery matter, called lava, iſſues from the mountain, and runs with a moſt rapid ſtream for ſeveral miles together, carrying away every thing before it till it reaches the ſea, which boils and hiſſes in an aſtoniſhing manner when the lava reaches it.

Suppoſe we were there, Henry, do you think you ſhould like to go up the mountain? What ſay you, Charlotte? Had you not rather live in England, and be contented with what it produces, than go to live near a burning mountain, to enjoy all the fine things I told you of?

There are numbers of theſe volcanos (as they are called) in the world; the largeſt we know is mount Etna, in Sicily.—When you are older you ſhall read a deſcription

of

of it in Brydone's Travels, which will aſtoniſh and delight you.

I am entirely of your mind, Charlotte; were I to go into that country, I ſhould endeavour to get courage to view it near, but ſhould approach it with trembling ſteps. But you muſt not think that theſe mountains were only made to frighten and deſtroy people. Like all things elſe, they have their uſe. There is a great deal of fire within the earth, which, if it had not places to vent itſelf at, might do a great deal more miſchief, nay, deſtroy it entirely.

The perſons who live on theſe mountains ſeem to enjoy life as well as others; and, as there are generally ſome years between the eruptions, they plant vines and other things, which prove very fruitful; and the mountain uſually ſmokes, or they hear noiſes from it, which ſhew that it is near burſting, ſo they ſometimes ſave themſelves from the danger by removing for a time.

When you are older, Charlotte, you ſhall read books of travels, which deſcribe what is worth obſervation in every country. Perhaps Henry may be a traveller himſelf, for you know gentlemen often make the tour, as they call it, and it is very right they ſhould ſee the world, if they take care to get ſufficient knowledge before they go, to enable them to make proper obſervations; but for an ignorant perſon to viſit foreign countries is only to expoſe his own ſhame wherever he goes; becauſe every one who ſees a gentleman that has left his own country to viſit theirs, naturally inquires what he is; and, ſhould they find him deficient in knowledge, he would deſerve to be laughed at and ridiculed; but, ſhould he prove ſenſible and well informed, his company would be ſought for, becauſe he could give an account of places and things which they have never ſeen; and would be reſpected, honoured.

The language which people in Italy ſpeak is Italian, and it is very faſhionable to learn it; beſides, if travellers reſide there long,

they muſt be at a great loſs without it. The French, indeed, is a language which almoſt all nations learn: therefore, if a perſon knows it, he may find ſomebody or other in moſt places with whom he can converſe; and if they underſtand Italian (or the language of the perſons in that country where they are), they may explain to the Engliſhman what the Italian ſays, and to the Italian what the Engliſhman ſays; this is called interpreting. But who would wiſh to be ſo troubleſome to others, when by a little pains and application he may learn all the languages himſelf, and be an accompliſhed gentleman?

I think we have ſtaid long enough in Italy, Henry, and am afraid you are tired; ſo take leave of the world for to-night, eat your ſupper, and go to bed; to-morrow I will tell you more. Good night, Charlotte.

Well, Henry, how did you ſleep? Did you dream of the myrtle hedges and burn-

ing mountains? I ſuppoſe you would like to have a full deſcription of every country in the world; but I hope you will one day be fond of reading, then I ſhall furniſh you with books, which will make you acquainted with a vaſt deal; from them you will learn that ſome people in the world are black, others have copper-colour complexions: that every country produces ſomething which does not grow any where elſe; that ſome parts of the world are hot, others exceſſively cold; but every climate agrees with the natives, that is to ſay, thoſe who are born there, better than any other would do; and the people in one land make themſelves as happy as others who have greater advantages, uſually thinking their own country the beſt in the world, and would not change it for any other.

You are an Engliſhman, Henry, ſo you muſt love England the beſt; and, if you travel all the world over, you will never find a better country. Here we have neither ſuch piercing cold, nor ſuch ſcorching heat, as ſome countries are ſubject to; we have

have plenty of corn to make bread; barley to brew beer; wool to ſpin for clothing; flax for linen; the beſt roaſt beef in the world, and many other comforts. And we have artiſts and manufacturers to make every thing we actually ſtand in need of; in ſhort, Old England is a very deſirable place, and here your friends live, ſo that I make no doubt, my dear boy, you will return from your travels with great pleaſure, tell us, who ſtay at home, what wonderful things you have ſeen, and love your native land better and better. But you muſt not deſpiſe the people of other countries becauſe they do not ſpeak, act, and dreſs, as we do, for to them we appear as ſtrange as they do to us.

I muſt now tell you a little about the ſea. You know I ſaid that between the different kingdoms on the earth there are vaſt hollow places. Pray obſerve this large ſpace on the globe; it is called the great ſouthern ocean. You have ſeen a fiſh-pond, which

is ſo deep, that if a man ſtood at the bottom, the water would cover his head; but that is no more than a cup-full, in compariſon of this great ocean. Only look what a ſpace it covers on the globe; then caſt your eyes to thoſe parts of the land which ſtand for the greateſt kingdoms. Obſerve, the ſea is by a great deal the broadeſt; it is ſo deep, in many places, that you cannot get a line long enough, with a piece of lead tied to it, to reach the bottom. When the wind blows very high it drives the waves up like great mountains of water, which roar, and make a frightful noiſe by their motion. Sometimes ſhips are driven about ſo by the winds and waves, that they are thrown upon rocks, which are a ſort of ragged hills in the ſea, as hard as ſtones, ſome of them of an enormous ſize, even above the ſurface of the water, others concealed under it. All ſea water has ſalt in it, which may be ſeparated from it by boiling; ſalt is ſo ſerviceable to us, that, after having been accuſtomed to it, we ſhould not know what to do without it, par-

ticularly

ticularly for meat, which, by being well rubbed with it, may be kept many months.

The reaſon that the freſh water in rivers does not ſpoil, and grow good for nothing, is, that it keeps running continually from the fountain-head, that is, the place in the earth it firſt ſprings from towards the ſea; and where there is a tide, as you know is the caſe in the Thames, it is owing to the ebbing and flowing of the ſea, which ſends the water of ſuch large rivers back again every day.

The ſea is in conſtant motion; and you would think it very aſtoniſhing to ſtand on the ſhore, and behold how majeſtically its mighty waves follow one another, rolling with a ſolemn and pleaſing noiſe; gradually advancing till they gain conſiderably on the ſhore, and when they have reached the bounds allotted them, and it is high-tide, they retreat in the ſame manner to viſit the oppoſite ſhore.

Philoſophers tell us that it is the moon which influences the water, and occaſions the ebbing and flowing of the ſea; and I

fancy you will be of their opinion when you are old enough to underſtand Mr. Nicholſon's Introduction to Natural Philoſophy.

Henry wiſhes to know where all the water that fills the ſea comes from. Indeed, I cannot tell; perhaps it may ſpring out from the middle of the earth: I rather think it does, and that there is a great collection of water there, but it is of no conſequence to us to know that; we are certain that it is of the greateſt uſe to us, and can ſee enough to admire in it, without ſearching for its ſource.

If the hollow places had been left empty, inſtead of being filled up with water, how frightful they would have appeared! It would have been impoſſible to have got acroſs to any part whatever. You think we might have had wings to fly over, Charlotte? Why, I muſt own, that when I have ſeen the little feathered race ſoaring over our heads, and ſporting about in the air, I have been tempted to wiſh for a pair of wings myſelf; but when I conſidered how

large

large they muſt have been to have carried ſuch heavy bodies as ours, I am apt to think we ſhould have found them very troubleſome incumbrances, and am ſure we are better without them. But had there been thoſe immenſe abyſſes I was talking of, and we could have contrived to make a clever pair of wings, we could not at any rate have flown far without reſting, and therefore muſt have tumbled headlong, and been daſhed in pieces.

Beſides, had there been any fiſhes, they muſt all have died, becauſe they can no more live out of the water, for any conſiderable time, than we can live in it; and now there are various kinds, as many, perhaps, as equal the number of the different ſorts of living creatures on the land. Some ſo aſtoniſhingly large that I know not what to compare them with; others as minutely ſmall; many extremely beautiful, others frightful to behold; ſome of them are moſt delicious food, and are caught in great quantities with nets. The turbot we are to have for dinner to-day came out of the

ſea,

ſea, and ſo do ſoals, whitings, cod-fiſh, ſalmon, lobſters, and many others.

Should all fiſhes keep in the wide ocean, there would be but few caught, and none but ſailors could eat them; but they come in ſhoals to the narrow parts of the ſea near land; and fiſhermen, whoſe buſineſs it is, go out in boats, throw nets into the ſea, and catch them [illegible]n ſome are ſent to all great towns, and from thence ſold to every place to which they can be carried before they are tainted or ſpoiled: ſome again, ſuch as the cod on the banks of Newfoundland, are caught with a hook and very long line; a bit of fiſh, or red rag, is faſtened to the hook, and ſerves as a bait to entice the fiſh to it. They are then ſalted, and ſent in ſhips to different parts of Europe, which furniſhes employment for a great number of ſailors, and is an extenſive and profitable branch of commerce.

If we did not eat fiſhes, the larger kinds would, for they prey on one another as birds and other animals do. In books of natural hiſtory there are a great many entertaining

tertaining things concerning fiſhes. Only think what a deal of pleaſure you will have, Henry, when you can ſit ſtill long enough to read them, and are ſufficiently improved to be able to underſtand them! In many of thoſe books there are pictures of what they deſcribe.

I forgot to tell you that fiſhes have no legs. You know it. Oh! I beg your pardon, ſir, I did not recollect what a man I was talking to; give me leave to inform you, however, why they have not; becauſe they have no uſe for them, and would find them very troubleſome; their fins anſwer the purpoſe of ſwimming much better.

Many fiſhes have very ſharp teeth, others thorns at their ſides, and various weapons of defence; and, inſtead of clothes, are covered with ſcales, which the water cannot penetrate.

There are a great many things growing at the bottom of the ſea, called ſea-weeds. I have a picture in my dreſſing-room made of

of them; you have often admired them, Charlotte. Indeed, they are extremely curious: the fiſhes, I ſuppoſe, eat them.

Beſides thoſe I have been ſpeaking of, that ſwim about, there are a vaſt number of ſhell-fiſh. That cabinet which ſtands there is filled with ſhells: it contains a great variety, but there are, for aught I know, hundreds more. Some are much larger than any here; others you ſee ſo ſmall that you could not perceive them unleſs they were laid on white paper; and yet in the microſcope they would appear to as much advantage as the inſects did. Obſerve what curious ſhapes and variety of colours! I know, my dears, you admire this beautiful collection, and well you may! every one of theſe ſhells formerly had a fiſh in it; it uſed to come part of the way out, as you have ſeen a ſnail do, and draw back again at pleaſure; they generally remain at the bottom of the ſea, but ſometimes ſtorms throw them on ſhore, where they are picked up and kept by curious people.

There is likewiſe coral, both white and

red.

red. Here is a bit of each; that beautiful yellow ſubſtance by it is amber; it makes elegant cabinets and other things; and the ladies in former days were fond of wearing necklaces of it.

All pearls come out of the ſea too; there are great quantities to be met with in a particular kind of oyſters; and people, called divers, have the ſkill to ſink themſelves to the bottom of the water, and, by means of ſome ingenious contrivances to ſupply them with air, are able to ſtay long enough to get a great many pearls, which they ſell for a deal of money; and thoſe who can purchaſe them think themſelves very fine when they are adorned with them.

People of fortune ſhould have handſome clothes, jewels, and other ornaments, becauſe it is very right for them to dreſs better than their inferiors, who could not afford ſuch things, as they find it hard to get money enough for the bare neceſſaries of life;

life; therefore, perſons who have plentiful fortunes ought to encourage labour and ingenuity, by laying out ſome part in buying what others ſell and make, to procure themſelves and families a livelihood; but it is very wrong to value themſelves on riches and fine clothes, for they ſhould conſider that gold, ſilver, and jewels, come out of the bowels of the earth, and that they could not *make*, nor probably *find*, any of them: that their fineſt ſilks are ſpun from the entrails of a little crawling worm, and that after it is ſpun they could not uſe it till it had gone through the hands of many poor workmen. What would the rich do without the poor? Could they make their own ſhoes, build their houſes, plough their fields, fell their timber trees, ſhear their ſheep, and a hundred other things abſolutely neceſſary to be done by ſomebody? They ſhould therefore learn to behave with kindneſs and condeſcenſion to the induſtrious, and remember that the meaneſt artificer, if he diſcharge the duties of his ſtation, is preferable to themſelves, unleſs they are diſtinguiſhed

guiſhed as much by their benevolence and greatneſs of mind as by their rank and riches.

Neither ſhould the poor ever forget how much they are obliged to their ſuperiors, and how much they depend upon them, but treat them with all poſſible reſpect, and never envy them; for as they have no money nor land of their own, they muſt periſh for want of neceſſaries unleſs they could obtain ſome by their labour. If they are ſo fortunate as to be paid for what they do they can purchaſe what they want with the money, you know, and may, in their humble condition, enjoy an equal ſhare of happineſs with the rich, and avoid many anxious cares and dangers, to which an elevated ſtation is frequently expoſed.

I dare ſay you did not think there were ſo many curioſities at the bottom of the ſea, nor ſhould we ever have known it, but by the invention of ſhips, which was a very curious and uſeful contrivance. Fine chi-

na,

na, muſlins, calicoes, ſpices, and other articles, are brought from the Eaſt Indies in ſhips, which carry back in exchange what our own country produces; they alſo convey to England vaſt quantities of tea, which is a plant that grows in the Eaſt Indies in great abundance; the leaves of it are dried upon plates of metal heated; this makes them curl; then they are packed in boxes and caniſters, and ſent to different parts of the world: But a good baſon of milk, or tea made from herbs, which our own gardens ſupply, are, in my opinion, greatly preferable, and much more wholeſome for us.

From the Weſt Indies we get ſugar, which is produced by boiling the juice of a particular ſort of plant called a ſugar-cane; the inhabitants have large plantations of it, which bring them in a great deal of money; but the poor negroes, who are employed to work in the plantations, undergo ſevere hardſhips.

Negroes are black people; many perſons in England, you know, have them for ſervants.

vants. Abroad they toil like horſes, and are frequently much worſe uſed, which is an exceeding barbarous thing, for they are *men* as well as their maſters, though they be of that black colour; but how much does it pain me to tell you that this inhuman commerce, which puts theſe poor creatures into ſuch a dreadful ſituation, is carried on by Engliſhmen, and even authoriſed by our own laws.

From Spain we get oranges, lemons, nuts, almonds, figs, and raiſins, (which laſt are dried grapes;) from Liſbon the ſame, and, beſides thoſe articles, a great deal of wine. If there were leſs of that it would be better; for many people drink ſo much of it as to hurt their conſtitutions. Would they make it a rule to drink only when they were thirſty or weary, and leave off drinking as ſoon as they were refreſhed, they would preſerve their healths, and might perhaps live many years longer.

I could mention the productions of other countries, but do not intend to travel round the globe with you. I ſhall only tell you

that there are many things valuable and worth obſervation in every part of the world; and thoſe which you have no opportunity of ſeeing, you may read of in books, which will give you much better accounts of them than I am able to do.

You find, my dears, what great uſe ſhips are of, but how ſhall I make you underſtand the nature of a voyage? I will take you both to Mr. Wilſon's, where you will ſee a model of a ſhip; that is, a little thing made exactly like one, only a great deal leſs, as you will judge by the figures which repreſent the ſailors. Mr. Wilſon will explain the maſts, ſails, ropes, and other parts, which I am totally unacquainted with.

When a voyage is to be taken, the ſhip is firſt perfectly repaired, if it be not a new one, ſo that it may effectually keep out the water, and not ſink. The ſails and maſts muſt be in exact order, ſtrong, tight, and whole, that they may be able to ſtand

the force of the winds; then they lay in a great quantity of biſcuits, as bread would ſoon get mouldy; ſeveral caſks of freſh water, for that in the ſea is very nauſeous; ſome barrels of ſalt beef and pork, becauſe they cannot get freſh meat when they launch out into the wide ocean, and leave the fields and meadows behind them. They carry as much garden ſtuff too as they conveniently can; when it is gone, they are obliged to make ſhift without, till they land ſomewhere to get a freſh ſupply.

A ſhip which goes on a trading voyage, beſides a ſtock of proviſions, takes in her cargo, that is, the goods which the owner propoſes to ſell in foreign countries; ſuch as wool, watches, hardware, I mean knives, ſciſſars, various kinds of tools, and numerous articles, which other nations are glad to purchaſe from England, becauſe they are made better here. Every ſhip requires a certain number of men, ſome more ſome leſs, according to the ſize of the veſſel; for there is always a great deal of work for them to do, eſpecially in ſtormy weather.

ther. One time all the ſails muſt be ſpread in order to receive the wind, at other times all muſt be furled, or taken in, to prevent the veſſel's being overſet by violent ſquails of wind. They have large iron things on board called anchors, with very great ropes, or cables, which are tied to them, and faſtened to the veſſel, and when they want to keep the ſhip in a particular place, they caſt them into the ſea, where they can reach the bottom, and they ſtick into the ground and faſten, ſo as often to preſerve the ſhip from being loſt. Somebody on board is obliged frequently to keep letting down a line with a large leaden plummet, that they may know the depth of the water. A man ſtands at the helm, with a compaſs before him: the helm turns the rudder, by which means he can ſteer the ſhip to any point of the compaſs he pleaſes, according to the directions he receives from the officer who commands the watch.

When

When the veſſel is perfectly fitted, and ready for her voyage, the captain is impatient to be gone, and keeps himſelf and all his jolly tars in readineſs to ſail with the firſt fair Wind; but I believe I muſt inform you what I mean by a fair Wind. Let us juſt ſtep out of doors. Now look forward; that is eaſt, behind you the weſt, on the right hand the ſouth, on the left the north. Now, you know, that when the wind blows behind you, it forces you along; when you face it, if very high, you can ſcarcely ſtand againſt it; but it does not always blow the ſame way: let us go in and look at the globe. Here is the eaſt, weſt, north, and ſouth: now, if they want to ſail to a country which is north, they muſt have a ſouth wind to blow them along; for if the wind were in the north, it would be impoſſible for them to get forward; ſo that ſometimes a voyage is made much longer than it would have been, from the wind's changing about from one corner to another, which often obliges them to go to other places, if it blow very high; but they are not obliged

to return for every change of wind, becauſe the art of navigation teaches the ſailors a method of managing the ſhip, ſo that they can get on by croſſing backwards and forwards, though if it blow right it ſaves them a deal of trouble.

It is a very ſurpriſing thing to think of, but it is really true, that in ſome parts of the ſea the wind will blow conſtantly for months together, every year, the ſame way, which enables ſhips to reach the places they are wanted to go to; and then the wind turns and blows the direct contrary way, which brings them back again: therefore people contrive theſe voyages ſo as to endeavour to get to thoſe parts time enough to have the benefit of them: They are called trade winds, or monſoons, and theſe arrows on the globe ſhew the particular parts of the ocean they blow in.

When people are out in the wide ocean, they are frequently whole months together without ſeeing any thing beſides ſky and

and water, excepting what their own ſhip contains. Look here, for inſtance, in the middle of the great ſouthern ocean: it is very diſtant from the land, and there are no paths marked out on the ſurface of the water, to ſhew the neareſt way to any place; but thoſe who have been there formerly have kept the exacteſt account they could of the rocks they eſcaped, the little iſlands they met with, and other particulars, which ſerve thoſe who come after them, as ſome rule to go by; for there are maps, or pictures, called charts, made of thoſe parts of the ſea, which people who ſail that way carry with them; by which means they know how to eſcape rocks, quickſands, whirlpools, and other dangerous things which are deſcribed to be in particular latitudes. You muſt at preſent be contented without an explanation of the word latitude; you will know all about it when you learn geography.

But after all their clever contrivances, they would be utterly at a loſs without a compaſs on board, which is an inſtrument

that looks like the dial of a clock, only inſtead of the hours, they put eaſt, weſt, north, ſouth; in the middle comes up a little ſpike, upon which is a needle that has a ſmall hole in the middle of it, to receive the little ſpike, upon which it hangs very lightly. This needle muſt be rubbed on the loadſtone, which gives it the remarkable property of pointing always to the north. One of theſe compaſſes is fixed on board every ſhip, and when they look at it, they can tell where the north is, and order the ſhip accordingly; becauſe they can either ſail towards the north, or from it, as ſuits their purpoſe, you know. But I ſhall ſoon get beyond my knowledge here, Henry, and muſt own myſelf a very indifferent ſailor; ſo I have done with navigation; but muſt ſay a little more about the loadſtone or magnet, as it is certainly a moſt wonderful, as well as uſeful thing.

The loadſtone is hard, very much reſembling iron, and uſually found in mines with

with that metal. It attracts or draws iron and ſteel, ſo as to make them ſtick to it. If you rub thoſe metals upon it they will attract alſo, though in a leſs degree. Here is a magnet, with two pieces of ſteel fixed in it; they are called its poles; one the north, the other the ſouth. Now, let us ſee what effect they will have on theſe needles which we work with: I will lay them on the table. Hold the magnet over them; ſee how they jump up; you would think they were alive; but it is only that the loadſtone draws them; they would lie ſtill enough if there were no loadſtone near them. Now, take notice, I will touch two others, one at each pole. If I attempt to bring that which has been touched by the north to the ſouth pole, it will drive it away, and ſo of the other, which is called repelling it.

I will give you this pretty little magnet, Henry, which I have got in a caſe. It is only a piece of ſteel, that has been rubbed in the manner I ſaid, but will divert you very much. How the loadſtone performs

all this I cannot tell, any more than I could inform you where all the water in the world comes from; but there are many things we ſee that we have not wiſdom to underſtand perfectly; happy it is that we can learn ſo much as we do!

Don't you think, Henry, that it is very entertaining to hear of all theſe wonderful things which I have been telling you of? and will you promiſe me to endeavour to remember them? Why, you will be able to inſtruct William by the time he is as big as you are now; and will not that give you pleaſure? Now you may go and amuſe yourſelves; I have a hundred things more to tell you, but would not tire you with too many at once; ſo adieu for the preſent.

Well, Charlotte, I ſee, by the preparations you have made, that you intend to ſolicit me for a walk. It will be equally agreeable to me after the heat of the day, and our little beau will, I make no doubt, attend us. Come hither, my charming lit-

tle

tle fellow! you are ſo good-natured, Henry, and ſo attentive to my inſtructions, that I am happy to have you by my ſide. Charlotte and I are going to walk in the fields, and could not bear to go without you, though I fear we ſhall be obliged to make you ſit up beyond your uſual hour.

We will firſt walk up this ſhady lane, where we may gather batchelor's buttons, and numbers of other flowers, which were blown the other day; there will be freſh ones continually till the ſummer is over.

Who will get over the ſtyle firſt? The gentleman, to be ſure, and then he can hand the ladies, you know. Take care! take care! Henry, do not be in too great a hurry, leſt you tumble, and that would be a ſad diſaſter, to ſee our beau rolling in the duſt. Now we are all ſafe.

What a delightful proſpect is here! How rich the earth looks, with the beautiful mixture of paſtures, where the flocks and herds are feeding, and corn fields almoſt ripe for harveſt, which promiſe bread for thouſands! How cool and refreſh-

ing does that river look, winding along amongſt them. Then that majeſtic wood! where grow oaks, which, perhaps, will one day be made into ſhips, and plough the ocean to bring us treaſures from diſtant lands. But above all obſerve the glorious ſun! he appears to be now ſinking in the weſt, but to-morrow will ſhew himſelf in the eaſt. I think I have never told you any thing about him, and indeed I ſcarcely know what to ſay, becauſe many particulars which are known concerning him you could not at preſent be able to underſtand. However, you may depend on it, that I will never tell you any thing but truth, and if you do not comprehend me now, you undoubtedly will, when it ſhall be repeated to you ſome time hence, when your underſtanding will be improved. You muſt endeavour to gain a little knowledge every day, and in time you will have a conſiderable ſhare.

Well,

Well, the ſun then is ſuppoſed to be a very large globe of fire, but different from any that we know. It is thouſands and thouſands of times larger than the world we live in. It keeps every thing that grows alive by its heat; for in all plants and trees there is a juice called ſap, which, if the ſun did not melt it, would be ſo thick that they would not ſhoot out. You know, that in the winter all the leaves drop off the trees, and there are no plants or corn growing; that is becauſe the ſun ſhines but little at that time of the year, riſes late, and ſets early, ſo that the earth has but little of its heat, to what it has in the ſummer, when it appears by four o'clock in the morning, and we do not loſe ſight of it till eight at night. The ſap has not time to get thick in thoſe ſhort nights; beſides, the air, though cooler in the night than in the day, retains a great degree of heat, and is not like the chilling cold of winter, even at *noonday*. I ſaw you very curious the other day, Henry, examining the carpenter's glue-pot when he was at work in the houſe.

Did you not obſerve that the glue was very thick before it was put on the fire, but, when it had been on ſome time, it melted and became quite thin? Now we may compare the ſap in the trees to glue, becauſe, like that, it requires heat to melt it. If the glue-pot ſhould be put on a fire, and taken off ſoon, it would not be much melted, and if it ſtood off a long while would be quite hard; but if you ſet it on long enough to diſſolve it entirely, and keep it from the fire but a little while at a time, it would never get cold and thick. In the ſame manner the ſap is affected by the ſummer and winter. The continued heat of the ſun in the long warm days diſſolves it ſo entirely, that it cannot get thick in the ſhort nights, and, on the contrary, in the ſhort cold days it does not receive warmth enough to melt it.

Winter is a dreary, unpleaſant ſeaſon, though of very great uſe, as it prepares the earth for the growth of the various fruits which

which the other ſeaſons produce, and in its turn is exceedingly beneficial to our healths, though, were it to continue always, we ſhould be in a terrible ſituation; but as it is only for a little while, we do very well, becauſe there is plenty of proviſion, both for man and beaſts, laid up in barns and ricks. There are coals and wood to make us cheerful fires, and there has been wool enough taken from the ſheeps' back to furniſh us with flannels and other warm clothing. When we have felt the pinching cold of this uncomfortable ſeaſon, we are the better prepared to enjoy the lively one that follows. How agreeable it is to ſee the trees which have been ſtripped of their leaves renewing their verdure; to behold the little crocuſes and ſnow-drops peeping out of the ground; to hear the little warblers chanting forth their notes as if they were ſinging ſongs of joy; and to obſerve the poor people come out of their cottages with cheerful looks to purſue their daily labours, now no longer hindered by winter's froſt and ſnow, which muſt have been

dreadful to thoſe who could not afford themſelves good fires and warm clothing.

I am going to tell you a very ſurpriſing thing, Charlotte. I dare ſay you think the ſun goes round the earth. It does not, I aſſure you; it is fixed, and the world goes round it once in a year. Before they diſcovered how large the ſun is, people thought as you do; but now we might as well ſuppoſe (as Mr. Ferguſon ſaid) that if you had a fowl to roaſt, it would be neceſſary to keep a great fire going round it, while the ſpit remained immoveable. No, I think indeed if the earth wants ſo much aſſiſtance from the ſun, it is very well worth while to travel for it; and thus the matter really is ordered.

But we muſt begin to think of returning, for there is a deal of dew on the graſs, and I fear we ſhall wet our feet and catch cold. This dew is very refreſhing to the earth, and as acceptable as a glaſs of water to you when you are thirſty.

There

There is, as I told you, a great deal of water in the earth, but in ſummer it lies very deep, and could not get up of itſelf to moiſten the plants; however, the heat of the ſun draws it, and when he ſets, it falls and ſupplies the want of rain, of which you know there is but little in the ſultry weather. Much of it would do a great deal of harm; ſpoil the hay, beat down the corn, and a hundred bad things. After all the crops are got in, it is very neceſſary to make the earth fit to receive the ſeed, and to help it to grow afterwards; for were the ground to continue always as dry as it is now, there would be great difficulty in breaking and turning it up with a plough, and the ſeed, when ſown, would not ſwell at all; however, the ſun not only draws moiſture out of the earth, but much more out of the ſea, which goes up high in the air, and gathers into clouds, that are driven about by the winds, till they come over different parts of the land; and when they are too heavy, they break, and fall down in ſhowers. You may have ſome notion of this,

if

if you put ſome boiling water in a tea-pot, and cover it with the lid. When it has ſtood a little while, if you take the lid off, you will find drops of water withinſide. The heat which the fire left in the water cauſed them to riſe up. In the ſame manner the ſun acts in reſpect to the ſea, and perhaps the fire that is withinſide the earth may heat the water at the bottom, and help to make the vapours riſe.

Why, I ſhall make a little philoſopher of you, Charlotte! I do not mean, my dear, to excite a deſire in your mind of entering too deeply into the ſtudy of theſe things. I would only have you read ſome eaſy books on the ſubject, that you may not, like the ignorant common people, think the ſun a little thing, the ſize of a plate, and placed in the heavens only to be gazed at. I am glad we are almoſt at home, for it begins to be very cool, and I imagine you wiſh to go to reſt. To-morrow evening we will once more look at our globe.

Oh!

Oh! you are come to claim my promiſe, which I ſhall gladly fulfil. Now for the globe. I told you that the ſun remains always in the ſame place, and that the earth goes round it once in every year; beſides that, ſhe turns round every day. You think it ſtrange to move two ways at once. Not at all. Why, you can do the ſame, I am ſure; you may keep turning about, and contrive ſo to change your place every turn, that you can get from one end of the room to the other by degrees. What I want to convince you of at preſent is, that the earth's turning round is the cauſe of day and night; you muſt therefore ſuppoſe this candle to be the ſun ſtanding ſtill. Now, I will put a little pin in the middle of this ſide of the globe next the candle, another in the ſide which is turned from it. When I turn the globe about, the ſide which is now dark will be enlightened, and the light ſide will be in darkneſs. This is a repreſentation of what happens to the earth every day and night. Theſe places on which the ſun ſhines have daylight; thoſe

thoſe on which it does not ſhine are in darkneſs: by this means all parts of the world have the benefit of the ſun's heat to warm and ripen their ſeveral productions; and likewiſe to refreſh the earth, plants, and animals; for you know it is after the ſun diſappears in the evening that dews fall. The parts of the earth which are repreſented here where the wire comes out, are called the northern and ſouthern poles. They are very cold places; for ſometimes the ſun is not ſeen there for ſeveral months, and then they never loſe ſight of him for ſeveral more. The reaſon of this you will be told when you are taught the uſe of the globes, for which I will procure you a more able inſtructor than myſelf. I ſhall only tell you that the abſence of the ſun is not ſo great a misfortune to thoſe people who are ſubject to it as it would be to us; becauſe thoſe countries where it happens do not produce the ſame things which England does; and all that grow there naturally are ſo formed as to be able to live in that climate. The inhabitants are as hap-

py as we; they work hard in thoſe months while they have day-light, and lay up ſtores for their long winter, when they dance and ſing, and are as happy by torch and lamp-light as our country lads and laſſes when they celebrate harveſt-home, enlightened by the mild beams of the ſetting ſun.

In the laſt-mentioned countries they catch whales alſo, which I muſt give you ſome little account of.

They are fiſhes of an enormous ſize. I have read of ſome two hundred feet long. You, Charlotte, know how much a foot is, but Henry does not. This piece of ſtring is a foot long. You can count a hundred; one, two, three, four, five, &c. very well; only think then of a living creature two hundred times as long as this piece of ſtring! What large eyes he muſt have! And ſuch a throat, that he can ſwallow a man up at a mouthful; and yet this creature may be overcome, and vaſt numbers

of

of them are killed in Greenland, particularly by people who go from Holland. Find Holland on the globe. This is the frozen ſea; ſo called becauſe there is generally a great deal of ice in it. The air of this place is ſo cold, that one would think nothing could induce people to venture thither; but many do, for their voyages are very profitable. They have a particular kind of veſſels on purpoſe for whale fiſheries; and when they ſee one they immediately throw a ſort of dart at him, called a harpoon, which ſticks in, and wounds him, and then he ſinks under the water with the harpoon ſticking in him; but there is always a ſtring tied to it, with a large gourd faſtened to the other end; this floats on the water, by which they know whereabouts the whale is, and wait for his riſing up again, when they are ready to ſtrike at him with their harpoons, till with repeated wounds he dies. When they have killed him, they laſh him to the ſide of the veſſel, or find means to drag him hard on the ice or ſhore, and cut him in pieces, and put his fat into

caſks,

caſks, which they boil and make oil of, and ſell it for a great deal of money when they return home, for it is uſeful in dreſſing ſeveral ſorts of ſkins, likewiſe wool, and in a hundred other things.

The people who live in that cold country, where I told you they continued for ſeveral months without the light of the ſun, burn this oil in lamps; and it is quite a treaſure to them.

The large whales have two monſtrous tuſks, ſometimes fifteen feet long, which riſe out of their jaws, and ſerve them to gather the weeds together, upon which they are ſuppoſed to feed: Theſe tuſks are ſplit, and made into what we call whalebone; which is likewiſe ſold to great advantage; for it is uſed in ſtays, whips, and many other things. The inhabitants of theſe countries catch a number of wild beaſts, and make very comfortable clothes for themſelves of the ſkins.

I hope

I hope you perfectly underſtand me, my dears, in reſpect to the earth's turning round. You do, you ſay, Charlotte; but Henry looks a little doubtful. You think if it were ſo you ſhould tumble off. No, you would not: for there is ſomething in the earth which draws you towards the ground in the ſame manner as a loadſtone draws iron and ſteel. Pull your magnet out: take up this needle: there, ſee, if you turn them round an hundred times, it will not drop off; and if you pull it away, it will fall towards the magnet again. So, if I were to hold you up high, and let you go, you would tumble to the earth, becauſe it draws you. The ſteel of which the magnet is made is hard, and therefore the needle cannot enter it, but ſticks to the outſide; the ſurface of the earth is likewiſe hard, or we ſhould be all drawn into it. The needle has no life in it, therefore cannot move about on the magnet, or it might go all over it, becauſe one part does not draw any ſtronger than another. We, you know, are alive, and therefore can change our place upon

upon the earth; but were we to attempt to fly into the air, we ſhould infallibly tumble down; and not only people, but every thing on the earth, is affected in the ſame manner. If we ride upon a horſe, we are ſtill attracted, but his body ſupports us from falling to the earth, becauſe it is impoſſible for us to tumble through a horſe; but if by any accident he ſhakes us off, down we come to the ground immediately.

You wonder we do not feel the earth move. Why, do you think this little mite which ſtands here on the globe can feel that move? I dare ſay he cannot, but ſeems to himſelf to ſtand quite ſtill while it is turned round; for all that he ſees about him are moved as well as himſelf, and therefore he remains in the ſame place on the globe. Could he be taken in a moment from this part of the globe to that, and had the underſtanding of a man, he would be convinced that it really does turn round, becauſe he would find the face of the ſky perfectly changed; for ſuppoſe he was removed

moved at midnight, when the moon was ſhining, and the ſtars glittering in the heavens, he would, to his aſtoniſhment, find himſelf in broad day, enlightened by the meridian ſun.

But till you are older you cannot underſtand much about the ſtars; and, indeed, I know but very little of them myſelf; ſufficient, however, to fill me with wonder and admiration. I am convinced, in my own mind, that it is poſſible there may be thouſands and ten thouſands of ſuns and worlds, many of them much larger than this which we inhabit; it is as probable to me, as that we might roll thouſands and thouſands of marbles about different parts of this earth without their touching or coming in one another's way; becauſe I am ſure there is room enough for them in the heavens; and, I think, if you turn your thoughts that way, and read what has been written on the ſubject, when you are old enough, you will be of the ſame opinion.

What

What do you ſay, Henry? Do you think that the people on that part of the earth which is oppoſite to us, ſtand at this time on their heads? Indeed, my dear, they do not; they have their feet upon the ground and their heads towards the ſky. The trees, plants, houſes, and all, are the right end upwards. They cannot poſſibly fall into the ſky; it would be nonſenſe to ſay ſuch a thing.

The air we breathe in entirely ſurrounds the earth in the ſame manner as the peel ſurrounds an orange, or the ſhell a nut; but is ſo thin that you cannot ſee it. You know that chocolate is not ſo thin by a vaſt deal as water, and water is a great deal thicker than air; for we can ſee that, but cannot ſee air. If it were not ſo very thin we could not breathe in it. Every time we fetch our breath we draw in freſh air; if we drew in water in that manner it would drown us. When we draw in freſh air we throw out that which is become hot by having been in our body. Convince yourſelf of what I ſay; put your hand to your mouth,

and draw your breath; does it not come out warm? but the open air feels cool to your face. If there was no air we could not live; and if we could live we ſhould not be able to breathe: it is of uſe to us in an hundred reſpects, being neceſſary for the preſervation of all living creatures in the world. Even the fiſhes have air-bladders, which are of infinite uſe to them. The trees and plants in general would die without air, and we ſhould have no winds, which you know are very uſeful, as I told you before, in reſpect to blowing the ſhips along, and driving the clouds about, ſo that they may break and fall in different places on the dry land, inſtead of returning back to the ſea, from whence the ſun draws the vapours that form them.

The wind is a great ſtream of air; and though it ſometimes does miſchief, yet it is of infinite uſe, as the air would become extremely unwholeſome if it were to remain ſtill and motionleſs.

Now I have made you turn your thoughts to the ſky, I muſt not forget the moon, for that is a very beneficial thing to us. She is not a globe of fire, like the ſun, but ſuppoſed to be like the earth we live in. All the light ſhe has is borrowed from the ſun, for the light goes from him to the moon as it comes down to us; and the inhabitants, if there be any living on the outſide, as we do, ſee the light in the ſame manner, and in all probability enjoy equal advantages with us, from his warm, refreſhing beams. Could we be removed thither, our earth would appear to us like the moon, only larger. The moon and earth are both ſo large and thick that the ſun cannot ſhine through them, but only make them look bright, as even the candle will do any thing that it ſhines upon, which could not be ſeen in darkneſs.

Take this gold watch, put it in a dark place, and it will not be ſeen; let the candle ſhine upon it, and it will appear very bright, becauſe it receives the light; ſo it is with the moon; we ſee that part light

which the ſun ſhines on. Sometimes it is but a very little creſcent, at other times a full round moon. The ſun always ſhines upon half of it at once; but it happens that part of that half may be turned from us. I can make you underſtand this better by the globe than from any deſcription.

We will ſuppoſe it to be the moon, the candle the ſun, and your little round head, Henry, to be the world. Now you ſee the whole of the light ſide fronts you, but move the globe a little from the place it now ſtands in, or move yourſelf, and part of the dark ſide will be towards you. We can ſee no more of the moon than that piece of the enlightened part which fronts us, that is like a half moon. Go round to the other ſide, and you will ſee there is no light ſhining on it; it appears very different from the other; and you would not ſee it at all, only that the whole room is enlightened by the candle; but in reſpect to the moon itſelf, you can ſee no part of that which the ſun does not ſhine upon any

more

more than you would ſee this globe if the candle was taken away.

The eclipſe, which you were ſo entertained with a little while ago, was occaſioned by the ſhadow of the earth falling on the moon, which always happens when the earth is in a ſtraight line between the ſun and the moon. You ſee if I place a ſcreen, or any thing between the candle and the wainſcot, the ſhadow of it will be ſeen on the wainſcot: there is the ſhadow of my hand; put yourſelf, Henry, in this place, and we ſhall ſee your ſhadow; that is to ſay, as the light cannot ſhine through you, you keep it from falling on that part of the wainſcot which is oppoſite to you.

I ſhall ſay nothing to you about the other planets, comets, fixed ſtars, milky-way, &c. becauſe I fear they would puzzle your little heads too much at preſent, but ſome time hence ſhall let you have Mr. Newbery's Philoſophy of Tops and Balls, which is a clever little book, and Ferguſon's Gentleman and Lady's Philoſophy; and, when you are capable of learning more,

your papa's library will furniſh you with Nicholſon's Introduction to Natural Philoſophy, and Bonnycaſtle's Aſtronomy. It grows very late. Henry, how have you been able to keep your little eyes open ſo long? Good night!

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Eaſy Introduction, &c.

PART III.

I FEAR, Charlotte, that the rain will prevent our walking to-day, therefore take your work and ſit down with me. If you are able to remember what I have told you lately, you have made a very conſiderable addition to your ſtock of knowledge. Do not you think, even from the ſlight

view we have taken of the works of nature, that there muſt be ſomething delightful in the purſuit of theſe ſtudies? I hope you will always have a taſte for ſo profitable an amuſement. I have as yet only ſown the ſeeds of knowledge in your mind, but ſhall be happy to aſſiſt your own induſtry in the cultivation of them, and hope you will find the felicity of your life increaſed by purſuits ſo properly adapted to your nature.

We have examined a variety of flowers, plants, trees, &c. and find them all moſt wonderfully formed to anſwer the purpoſes they ſeem to have been deſigned for; likewiſe the elements, fire, air, earth, and water, and every thing that the earth and ſea contain. Animals are ſtill more curious, and we have diſcovered that they are of a nature ſuperior to vegetables, or any inanimate production of the earth; that every one is furniſhed with what is neceſſary for its ſubſiſtence, and has as much knowledge as it has occaſion for in order to preſerve itſelf from harm, and to take care of its young, as long as they ſtand in need of aſſiſtance.

But

But you ſee, my dear, that there is no living creature which reſembles us. Every thing appears to have been made in ſome meaſure for our uſe, and we are able to apply them to our purpoſes; therefore Man is properly called *the Lord of the Creation.*

In many reſpects, indeed, we ſeem to be inferior to animals, for numbers of them exceed us in ſtrength, ſwiftneſs, ſight, hearing, ſmelling, and other particulars; let us therefore endeavour to find what it is that raiſes us above them. The ſubject is very important, therefore pray give me your attention, and I doubt not but you will underſtand me.

Man at firſt is a little helpleſs Infant, unable to aſſiſt himſelf in the leaſt; and were he not nurſed with the moſt tender and aſſiduous care, he would periſh miſerably with cold, hunger, and nakedneſs: what would become of little William, think you, if there were no perſon to clothe, or take care of him?

The young of other animals have in general warm furs or feathers, are able ſoon to provide for themſelves, and to do all that their nature requires; but it is a long while before a child can take care of himſelf, for he does not even know, till experience teaches him, that fire will burn, water drown him, and a thouſand other things neceſſary for his preſervation.

However, he keeps gaining ſtrength and knowledge every day; in a ſhort time has the uſe of ſpeech, is able to diſtinguiſh one perſon from another, takes notice of every thing he hears, ſees, or touches, and is ſoon ſuperior in underſtanding to the moſt ſagacious animal in the world; though ſtill very far from poſſeſſing either the ſtrength or knowledge of a man.

You cannot remember, Charlotte, the time when you were ſuch a little child as William, but can recollect that you were not always ſo big as you are now: you, I hope, will continue to grow and learn; but do you think that Tray is grown at all, or learned any thing lately? And as for your

Canary-

Canary-bird, does not he ſing the ſame notes over and over again? You may obſerve that there are children of various ſizes; and have, even in your ſhort life, ſeen thoſe who were great boys and girls attain the height of men and women: you have ſeen kittens grow to cats; puppies to dogs; chickens to fowls: in our growth then we reſemble the animals, only we are a much longer time before we attain our full ſize.

We are like them too with reſpect to fleſh, bones, ſkin, blood, eyes, ears, teeth, legs, feet, and many other particulars.

We, as well as the brutes, birds, fiſhes, and inſects, are kept alive by eating and drinking. Our body, as well as theirs, when it has attained its full proportion, improves no more; and in the courſe of a few years, when old age comes on, grows feeble, the ſkin ſhrivels, the teeth drop out, there is a viſible decay of nature, which at laſt ſinks under infirmity and dies: the body is then buried, and turns to duſt and aſhes; and were it to be mingled with that of

dogs and cats, or the meaneſt of animals, could not be diſtinguiſhed from them.

This would be a melancholy ſtory if it were the whole of the hiſtory of humankind; but I hope to convince you preſently, that we have ſomething in us that never dies; for it is a certain truth, that we have ſouls as well as bodies, and that the ſoul continues to live after the body is dead.

I can deſcribe the parts of the body to you, for they are viſible to the eye; but the ſoul cannot be ſeen. You may however ſoon convince yourſelf, that you have ſomething in the body very different from it.

Look at the animals; they can, like us, eat, drink, walk, ſleep; like them (as I ſaid before) we muſt be ſuſtained with food, or our bodies would periſh. It is the body then that eats, drinks, walks, ſleeps, and at laſt dies.

Now have you not found that whilſt your

your body was perfectly at reſt, when you were ſitting by yourſelf, that you could recollect a hundred things which you had formerly heard or ſeen? Cannot you contrive what you will do, even years hence perhaps? Do not you ſometimes feel joy, at others, ſorrow? Cannot you wiſh and reſolve? If you ſee any thing in pain or diſtreſs, do not you feel compaſſion for it? You can underſtand what other people ſay to you, and inform them what you like or diſlike; can every day learn to know ſomething more; can ſay to yourſelf, how can ſuch and ſuch things be ſo and ſo? and then think about them, till perhaps, without being told, you diſcover what you want to be informed of. Or ſhould it be a ſubject above your capacity, you can aſk information of others, make them know your meaning, and underſtand their explanation of things.

Now theſe operations of the ſoul are greatly above what the moſt ſagacious animal is capable of. They juſt know how to provide for themſelves, that is to ſay, to

ſeek for food and to eat it; to take a tender care of their little ones for a certain time; and to uſe thoſe weapons of defence which they are furniſhed with, againſt their natural enemies; but are no wiſer at twenty years old than at twenty months.

You do not ſee them examining any thing in Nature any farther than to look and ſmell at it, in order to diſcover whether it is good for them to eat. You never heard them converſing together, and telling their thoughts and opinions, as mankind do; becauſe they have not thinking ſouls. They have not reaſon; they cannot invent arts and ſciences. Every bird of the ſame kind builds its neſt alike, which ſhews that they do not think as we do; for if they did there would be variety in their works.

Mankind are for ever producing new and curious inventions. There is ſcarcely any thing in Nature but one perſon or other can make an ingenious uſe of it: for inſtance, what animal in the world could have made this watch? ſee how extremely curi-

ous

ous the inſide of it is. If I were capable of explaining its entire conſtruction, you would not be able to underſtand it. Thus much you can however comprehend, that it is compoſed of a number of wheels and other parts: here is a delicate ſteel chain; there is a ſpring; here a pendulum; now all theſe things together, when it has been wound up by the key till the chain is all wound upon that part, keep in motion till the chain gets all on this place, which is twenty-four hours. Under the glaſs you ſee is a dial-plate, with the twelve hours marked on it, and little dots between; each of which ſtands for a minute. There are two hands moved by the ſpindle which comes up in the middle; *that* is put in motion by the works withinſide. Theſe hands point out, one the hour of the day, the other the part of the hour which has elapſed at the time you look at the watch. The ſhorteſt hand only moves from one large figure to another in one hour, the other goes from twelve to twelve in the ſame time, which is ſixty minutes, ſo that

you

you may always know what time of the day or night it is by looking at the watch: indeed you have long been able to tell what it is o'clock, and therefore I ſhall ſay no more about it: but do not you think that the making ſuch a machine required a great deal of thought and contrivance?

If we had only bodies void of thought, as the animals have, no ſuch thing could ever have been made; no, not ſo much as a chair or a table: for without the power of thinking we could not have applied the creatures to our uſe.

Now if we think it neceſſary to do what we can to nouriſh and preſerve theſe bodies, which are of ſo periſhable a nature, that they may be cut off in a moment, or if they eſcape from being deſtroyed by diſeaſes or accidents, will moſt certainly decay with old age, and ſink into the grave, is it not of infinite conſequence to us to ſtudy what we can do for the ſoul, which I hope I have convinced you is ſo much ſuperior to the body?

I told

I told you that the ſoul ſhall live for ever; I can with equal truth aſſure you, that it depends on ourſelves whether it ſhall be happy or miſerable to all eternity, that is, for a life without end.

I have often, my dear, informed you, that there is a Divine Being called GOD, who made you and all things in the world; and you know I have taught you to pray to him night and morning. I forbore to ſay much to you concerning him, becauſe I knew the ſubject was too ſublime for your tender mind. I flatter myſelf, you are now able to underſtand me, and am eager to tell you of his *Goodneſs*. Young as you are, I think I can *convince* you that there is really a God.

Suppoſe you had found a watch, diſcovered its uſe, and how admirably it was adapted to ſerve the purpoſe, could you ſuppoſe that it had made itſelf?

Should you look at a houſe, could you imagine that it grew out of the ground, when you have ſeen carpenters, bricklayers, and other artificers employed in building

it? Now what muſt you think of the world and its productions, of which you know we have lately taken a general view?

It is not in the power of the wiſeſt man in the world to make even a blade of graſs, and ſtill leſs muſt be expected from the animals, which, as I have ſhewn, are inferior to us. It is evident from the conſtruction of every part of Nature, from the nobleſt to the moſt inſignificant, that they are all admirably formed; they muſt therefore have been the work of ſome wiſe, powerful BEING, infinitely our ſuperior. We can no otherwiſe account for our exiſtence than by ſuppoſing that we are likewiſe the work of his hand, for we know we did not create ourſelves, nor have we yet met with any creature that could form us.

As we did not make ourſelves, neither can we preſerve our lives. And even our reaſon, which ſo eminently diſtinguiſhes us above all other creatures in the world, would be of no uſe towards ſupplying our bodily wants, unleſs the world had been furniſhed with materials to exerciſe it with:

but

but the world affords us all we want; ALMIGHTY GOD has been pleaſed ſo to conſtruct it that it furniſhes ſuſtenance for all the living creatures it contains; but none have ſo large a ſhare of its bleſſings as mankind. We therefore are certainly bound to be thankful to our gracious Creator, for the innumerable benefits he has beſtowed on us; but how ſhall we find a way to pleaſe him?

Do you not think, Charlotte, that it would be a happy thing if God would vouchſafe to publiſh his will to mankind, and teach us the duties he requires us to perform? This, my dear, he has done. The BIBLE cantains all that is neceſſary for us to know and practiſe, and is truly called the *Word of* GOD, though penned by men.

The firſt five books were written by Moſes, and I purpoſe to tell you how he came to write them; but ſhall not relate his whole hiſtory, as you will ſhortly read it.

it in the ſcriptures; only I am deſirous of convincing you that Moſes was *commanded* by the ALMIGHTY *to write it.*

The people of Iſrael had for a conſiderable time been treated in the moſt oppreſſive manner by the Egyptians, as you will read in the BIBLE, where you will alſo learn how they came to be in Egypt.

GOD ALMIGHTY ſaw the cruelty that was exerciſed upon them by command of Pharaoh the king, and as he was a very wicked man, reſolved to make ſuch an example of him, as ſhould ſerve for a leſſon to all ſucceeding generations; and at the ſame time to perform ſuch wonderful works, as ſhould convince all who heard them related, that his almighty power is able to do whatſoever pleaſeth him; and that as he made all things at firſt, they are ſtill ſubject to his will, and he can reward the good, and puniſh the wicked, in the moſt aſtoniſhing manner.

Moſes was looking after the ſheep of his father-in-law on the mountain of Horeb, when ſuddenly the LORD appeared to him in

in a flame of fire, in the midſt of a buſh, and the buſh burned with fire, and was not conſumed. Moſes knew that it was the nature of fire to deſtroy wood, therefore he ſaid, "I will now turn aſide, and ſee this "great ſight, why the buſh is not burnt." And when the LORD ſaw that he turned aſide to ſee, he called unto him out of the midſt of the buſh, and ſaid, "Draw not nigh hither, "for the place whereon thou ſtandeſt is "holy ground;" and Moſes hid his face, for he was afraid to look upon GOD.

The uncommon appearance of a buſh burning with fire, without being conſumed, and the awful voice which he heard, ſtruck him with reverence, ſo that he dared not continue to look towards the place, fearing he ſhould not be able to bear the ſight of ſo much glory, as ſeemed to be breaking in upon him.

The great GOD himſelf, my dear Charlotte, is of a nature ſo infinitely ſuperior to ours, that whilſt we are in the body, we cannot

cannot poſſibly ſee him, but we may know by his works (thoſe wonderful works which I have lately been endeavouring to make you in ſome meaſure acquainted with) that he is preſent every where, and knows all things. But as they are always before our eyes, we are apt to overlook his hand, therefore, when the ALMIGHTY had any particular purpoſe in ſhewing his power or goodneſs, it was uſual for him to make his Preſence *evident* by ſome extraordinary appearance which ſhould awaken their attention and prepare them to receive and execute his commands; ſometimes by a bright and ſudden glory in the heavens, often by altering the courſe of nature; ſometimes by ſending his holy Angels, or good men called Prophets, to make his will known to mankind.

When the LORD had, by his glory, manifeſted himſelf to Moſes, he commanded him to go to the people of Iſrael, and tell them that he would ſhortly deliver them from their preſent afflictions, and lead them into a land of plenty and happineſs;

and

and that he ſhould likewiſe go to Pharaoh, and requeſt him to let the people go, that they might ſerve the LORD; for they dared not to ſerve him publicly in that land, as their fathers had done, becauſe the Egyptians would have killed them for it.

And Moſes ſaid, "Who am I that I "ſhould go unto Pharaoh, and that I ſhould "bring the children of Iſrael out of "Egypt?" for he was a man who had a very humble opinion of his own abilities. And God ſaid, "Certainly I will be with "thee." Moſes was ſtill apprehenſive, that *his* word would not be taken on ſo important a ſubject, therefore GOD vouchſafed to give him an immediate proof, that he would grant him the means of convincing them of his veracity, by performing ſuch wonderful things as none but the *Almighty Power* could effect; for he commanded him to caſt to the ground a little rod which he held in his hand, and it immediately became a ſerpent; and he was ready to flee from it, when the LORD commanded

manded him to take it by the tail, and it became a rod again.

Then the LORD commanded him to put his hand into his boſom and pluck it out, when he found it covered with a leproſy, which was a filthy diſeaſe very difficult to cure; but on his thruſting it into his boſom and taking it out again it recovered, and was as clear as his other fleſh.

Then the LORD commanded Moſes to go and do the ſame before the children of Iſrael, and if they were not ſufficiently convinced by theſe miracles that he came on *God's errand*, to take ſome of the water out of the river, and pour it upon dry land, and it ſhould immediately become blood.

But notwithſtanding that Moſes was ſenſible of the *immediate preſence of* GOD, and ſaw ſuch proofs of his *power*, he could not get the better of the timidity of his temper, and was ſtill apprehenſive that he ſhould not gain credit from the Iſraelites, becauſe he ſaid he was ſlow of ſpeech. But the LORD ſaid, "Who maketh the dumb,

"or

" or deaf, or ſeeing, or hearing, do not I " the LORD? Now therefore go, and I " will be with thy mouth, and teach thee " what thou ſhalt ſay :" but Moſes continued to entreat the LORD that another perſon might be ſent; he was therefore permitted to take Aaron his brother, and the LORD promiſed to put words in their mouths, and teach them what they ſhould do.

Then GOD commanded Aaron, who was at a diſtant place, to go and meet his brother, who was rejoiced to ſee him; ſo they went together, and aſſembled the principal perſons amongſt the Iſraelites, when Aaron ſpake the words which the LORD had ſpoken unto Moſes, and they wrought the ſigns of turning the rod into a ſerpent, and the hand becoming leprous, before all the people, who believed; and when they heard that the LORD had ſeen their affliction, they bowed their heads and worſhipped; and their hearts overflowed with thankfulneſs, hope, and joy.

Afterwards Moſes and Aaron went and told Pharaoh that the LORD GOD required that the people of Iſrael might be permitted to go and ſerve him in the wilderneſs; but Pharaoh ſaid, "Who is the LORD, "that I ſhould obey his voice to let Iſrael "go? I know not the LORD, neither will "I let Iſrael go:" and he reproved Moſes and Aaron for hindering the people from their work, and laid ſeverer taſks on them than before. GOD ALMIGHTY permitted him to do ſo, that the deliverance he was going to bring about might appear the greater.

The people however were extremely dejected, and began to reproach Moſes and Aaron as the authors of theſe new calamities; and Moſes complained to the LORD, that ſince he had been in to ſpeak unto Pharaoh he had done more evil to the people, and that they were not delivered at all.

They had already ſeen ſufficient to convince them, that GOD was able to perform his promiſe; and the hiſtory of their fore-

fathers, Abraham, Iſaac, and Jacob, abounded with inſtances of his loving-kindneſs towards thoſe who put their truſt in him: therefore it was a great crime in them to doubt; but it pleaſed the ALMIGHTY to continue his favour to them notwithſtanding; and he commanded Moſes to return again, and deſire Pharaoh to let them go, and if he required a ſign that the LORD had ſent them, Moſes ſhould take his rod, and it ſhould become a ſerpent; and they did ſo; but he hearkened not unto them; they therefore departed, and the next day went to him again; when, as the LORD commanded him, Aaron ſtretched forth his rod over the waters of Egypt, and all the river, and every ſtream of water became blood; likewiſe all that was in veſſels of wood or ſtone in their houſes, ſo that the Egyptians could not drink of the water of the land, and were greatly diſtreſſed.

This did not turn the obdurate heart of Pharaoh; for when Moſes came again to demand leave of the Iſraelites to depart,

he ſtill refuſed. So Moſes and Aaron were ordered to repeat the demand from day to day; and GOD conſtantly wrought ſome great miracle to teſtify that they were commiſſioned by him.

But you will read the account of them very ſhortly yourſelf in the Bible. I ſhall therefore only ſay at preſent, that Pharaoh was at laſt ſo terrified, that he was himſelf urgent for their departure, but did not believe and repent; for no ſooner were they gone than he determined to purſue them, and accordingly gathered his army together, and followed them.

In order to encourage the Iſraelites to put their truſt in him, the LORD GOD made his PRESENCE *viſible to them* in a remarkable cloud by day, and a pillar of fire by night; which in the beginning went before to direct their journey; but when they were in danger of being overtaken by the enemy, removed, and ſtood behind

behind them, and was a light by night to the Iſraelites, but to the Egyptians a cloud of darkneſs. Pharaoh and his hoſt overtook them at the Red Sea, and there they muſt have been entirely deſtroyed, but that the LORD continued to perform his wonders for them. Moſes ſtretched forth his rod, and GOD cauſed the ſea to go back by a ſtrong wind, and made a path of dry land in the midſt of the waters, through which the Iſraelites paſſed ſafely, having the waters like a wall on the right-hand and on the left; but as ſoon as Pharaoh and his hoſt were got into the midſt of the ſea, the LORD ſaid unto Moſes, "Stretch "forth thy rod," which he did, and the waters cloſed in on the Egyptians, and they were all drowned.

I ſhall not now relate to you, my dear Charlotte, what afterwards befel the Iſraelites. What I have told you was with a view to ſhew you, before you begin to read the Holy Scriptures, that the writer of the firſt part of them was really no common

writer, but was commiſſioned of God to inform the Iſraelites of their origin, and to communicate a ſet of laws which they were to obey in order to pleaſe him.

After a great variety of events the Lord commanded Moſes to go up to mount Sinai, and there he told him to write the two tables of laws which are ſtill called the Commandments, and make a part of our duty at this time. You know them by heart, and I ſhall ſoon explain them to you.

Moſes wrote his five books, called Geneſis, Exodus, Leviticus, Numbers, Deuteronomy, during the lives of the perſons who had been ſo miraculouſly delivered; therefore, had they not been ſtrictly true, they could not poſſibly have gained credit; for how could any man perſuade ſuch a multitude to think that they had been delivered from bondage, paſſed through the midſt of the ſea, heard the voice of God ſpeaking unto them in thunder, beheld his glory, which ſo greatly affect-

ed them that they entreated not to ſee it a ſecond time, leſt they ſhould die: Could, I ſay, any man in his ſenſes have been prevailed on to let thoſe things paſs for truth if he knew them to be falſe; and would they have been perſuaded to ſet apart particular days in the year in remembrance of what had never happened? Now, it is moſt certain, that the Iſraelites did believe the relations of Moſes, obſerved the laws he gave them, and commemorated the mercies they had received, and taught their children to do the ſame, with their reaſons for doing ſo. Many of theſe laws and ceremonies are kept by the Jews (who are deſcendants of the Iſraelites) to this very day, and will continue to be ſo till they all become Chriſtians.

I have much to ſay to you concerning the Jews, but ſhall be better underſtood when you read in the Scriptures who they were. To-morrow you ſhall begin to read the HOLY BIBLE, and I hope you will

daily increaſe in the knowledge of God, and ever continue his true and faithful ſervant, and then you will be entitled, through his infinite goodneſs and mercy, to a never-ending life of perfect joy and happineſs.

THE END.

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